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GERMANIUM DIOXIDE AS A REMEDY FOR ANEMIA*†

BY GEORGE R. MINOT, M.D., BOSTON,

AND

JOHN J. SAMPSON, M.D., BOSTON

[From the Medical Service of the Massachusetts General Hospital and the Collis P. Huntington Memorial Hospital of Harvard University.]

New therapeutic procedures are constantly brought forward prior to an adequate study of their value. The absence of suitable controls or a lack of understanding of the fundamentals of the problem at hand is apt to cause undue enthusiasm and raise false hopes of cure or improvement. Such seems to be the case for germanium dioxide, which has been advocated by Hammett and his associates, Nowrey, Müller and Iszard,[1 2 3 4 5] and an affiliated investigator, Lenker,[6] and an independent group of physicians, namely, Kast, Croll and Schmitz,[7] as a remedy for anemia because of the belief that it is a powerful erythropoietic stimulant. Kast and his associates are fairly conservative in their representations, which are in contrast to those of the other affiliated investigators.

In order to demonstrate the efficiency of a substance upon blood formation, evidence must be produced of increased marrow activity. This is shown by bone marrow growth which when rapid is reflected in the peripheral blood by increases of bone marrow white cells, platelets, and immature red cells. Merely an increase of the number of red cells in the peripheral blood is ordinarily no indication of increased blood formation.

The observations of Hammett *et al.* on animals and man show that in a few days following the administration (subcutaneously, intraperitoneally or by mouth) of germanium dioxide, there may be a rise in the red cell count. They present no suitable evidence to indicate that associated with the elevation of the red cells there appears in the blood stream any significant increase of immature red cells or other bone marrow elements. Müller and Iszard[3] noted that the bone marrows of animals that had received germanium were hyperemic. They took this gross observation as indicative of activity of red cell formation. A hyperemic bone marrow, as is well known, is not a criterion of increased erythropoiesis. Hammett and Nowrey[2] observed histologically an increased number of nucleated red cells in the marrow and thus deduced that erythropoiesis was unduly active. Such observations are only of value if the difference between the control marrow and that of the test animal is very great. Even the 60 per cent. difference presented by the authors is not large enough to be conclusive unless existent in a much larger series of animals than was studied.

Many of the red cell rises reported in animals were moderate and transient and do not appear to have been controlled by a sufficient series of observations prior to the administration of germanium dioxide. Much of the data presented serve as a good example of the natural variations in red cell count which laboratory animals display. The oscillating character of the curves upon erythrocyte formation is recognized by Hammett *et al.*, and is taken to indicate that the erythropoietic action is periodic, yet these curves are quite identical with those obtained on control animals. Nowrey[5] has endeavored to decide whether or not the drug permits concentration of the blood. His results suggest that this does not occur, but the methods used are not sufficiently standardized to give the work convincing character. Müller and Iszard[3a] suggest that germanium may act as an oxygen carrier.

The papers by Kast *et al.*[7] and by Lenker[6] particularly deal with the treatment of anemia in man by germanium dioxide. Cases of anemia due to blood loss and other causes as well as pernicious anemia were studied. Kast and his associates[7] believe that germanium dioxide exerts a "distinct erythropoietic action," but that its final value can be determined only after a study of many more cases, while Lenker considers that cases of "secondary anemia responded most wonderfully" and "in cases of pernicious anemia of recent standing germanium has some value." On analyzing the evidence presented by these authors it is hard to feel that the im-

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provement shown in many instances, particularly in Lenker's cases, is any greater than would have occurred if no special therapeutic procedure had been undertaken.

The studies on germanium reveal the definite fact that its dioxide is relatively non-toxic. Hammett, Nowrey and Müller[1] showed that "germanium dioxide can be administered subcutaneously to the albino rat in doses up to 180 mg. per kilo of body weight with no harmful effect." Müller and Iszard[3] calculated from their own data that the lethal dose is about 586 mg. per kilo of body weight. The mechanism of its toxic action is not one of accumulation. Müller and Iszard suggest that germanium poisoning expresses an over-stimulation of the blood-forming organs. Such an expression of toxicity has not as yet been recognized. Müller and Iszard[3] gave to a man by mouth 356 mg. in one dose, and Kast *et al.*[7] administered the drug in this manner to 16 patients in doses of 100 to 200 mg. every one to three days until about 1 gram had been given. No untoward symptoms developed in any of these individuals. Müller and Iszard gave by mouth to a man 61.5 kilos individual doses of germanium dioxide as high as 234.2 mg., and 2408.7 mg. in 27 days without any ill effects. Lenker, who gave it subcutaneously to his patients "in varying amounts and intervals," apparently using about 40 mg. per dose, likewise observed no toxic manifestations.

Our observations also show that even in larger doses than recorded above, germanium dioxide is relatively non-toxic. Four to six doses of from 2 to 5 mg. per kilo of body weight, given intravenously or intraperitoneally to rabbits, every two days, produced no symptoms, while a single dose of 450 mg. and another of 600 mg. per kilo of body weight given intraperitoneally were without untoward results. To man we have administered 200 mg. intramuscularly (4.8 mg. per kilo) every other day for four doses, and by mouth 275 mg. (6 mg. per kilo) daily for seven days so that a total of 1925 mg. was taken. Neither of these two patients with anemia, nor six others receiving somewhat smaller amounts, developed toxic symptoms or signs.

Our observations and opinions concerning the toxicity of germanium dioxide are in accord with those of others. On the contrary, our conclusions, drawn both from observations and the published articles regarding the erythropoietic action and therapeutic value of this substance are divergent from those of the authors quoted above. Our studies concerning these latter effects were made on rabbits and on patients with anemia.

Four rabbits were each given intramuscularly or intraperitoneally, every two days, a total of four doses of germanium dioxide.* The first rabbit received at each injection 2 mg. per kilo of body weight and the others 15, 18 and 50 mg. respectively. Prior to the administration of the drug, determinations of the percentage of hemoglobin, red cell and reticulated cell counts, total and differential white cell counts and estimation of the number of blood platelets, were made five to seven times over a period of two to three weeks. After the first injections were given these examinations were repeated every few days for 35 to 50 days. The formed blood elements of two other rabbits, eating the same food as those that received germanium and living with them, were followed throughout the period of observation on the latter animals. The red cell count prior to the administration of germanium, of not only each of the four animals receiving this drug, but also of the two control rabbits, fluctuated by at least 1,200,000 per cu. mm., while a difference of as much as 2,200,000 per cu. mm. was observed in one animal. The difference recorded between the highest and lowest control counts in the six rabbits was as much as 3,000,000 per cu. mm. Marked alteration in the level of the red cells often developed rapidly, and occasionally the extreme variation occurred within three days. Relatively marked and often rapid fluctuations in the red cell count of rabbits, like fluctuations in their temperature,[8] are recorded by others; for example, Goodall[9] and Burnett[10] and, on previous occasions, we have observed the same not only in rabbits but also in other laboratory animals.

The hemoglobin fluctuated with the red cell counts, but to a lesser degree.

The rabbit that received doses of 18 mg. per kilo showed no fluctuations in the red cell count after the injections that were in the least degree different from the variations before germanium was given. The red cells of the animal receiving 2 mg. doses did show a rise of 1,800,000 per cu. mm. four days after the second injection. This rise reached a no higher level than observed before the drug was administered. The count fell 1,000,000 per cu. mm. in the next eight days, then rose 1,200,000 per cu. mm. in the following six days, later again decreasing. The red counts obtained in the two weeks before the substance was given gave an average figure close to that for the average of the counts made in the two weeks after the first injection. The rabbit given 50 mg. doses showed during the six days after the first one, red cell variations of not over 300,000 per cu. mm. On the eighth day after the first injection (two days after the fourth and last) the count rose 2,000,000 per cu. mm. above that of the average for the preceding days. However, this elevation was but 200,000 per cu.

*The germanium dioxide was supplied in purified form by the New Jersey Zinc Co. It was dissolved with difficulty in alkaline Ringers solution with a PH between 8 and 9, then neutralized and sterilized before administration under aseptic conditions.

mm. higher than occurred during the control period. The count during the next 30 days fluctuated by 1,000,000 cells per cu. mm., averaging slightly higher than in the control period, but no more than in other control animals. During the six days that the fourth rabbit was given four injections of 15 mg. per kilo, the red cells fell 1,800,000 per cu. mm., from 5,800,000 to 4,000,000 per cu. mm. From this level the count rose to 6,800,000 per cu. mm. seven days after the last dose was given. This count was 500,000 cells per cu. mm. higher than observed in the control period. In the next two weeks eight red cell counts averaged 6,100,000, while eight counts made in the two weeks before the injections averaged 5,800,000 cells per cu. mm.

The reticulated red cells, usually 1 to 7 per cent. of rabbits' erythrocytes, showed no increase following the administration of germanium dioxide. The white cell counts of all the animals were at all times between 6000 and 16,000 per cu. mm. with the following two exceptions. The first was a count of 18,000 per cu. mm. (a rise of 9000 in 48 hours) on the day of the fourth injection in the rabbit receiving 50 mg. doses. This animal's count then fell to below 15,000 in 48 hours. The second exception was the recording of a rise in two days from 12,000 to 25,000 white cells per cu. mm. 10 days after the last of four doses of 15 mg. per kilo. The count soon fell to normal.

No significant changes occurred in the differential white cell counts except that with the highest counts, the polynuclears became slightly increased and there was a doubtful tendency for these forms to increase a day or so after the second or third injection of germanium. At no time was there any increase of immature white cells, and no changes in their histology occurred.

The fluctuations in the numbers of blood platelets during the course of the observations were no greater than normal and their character at no time suggested the presence of an abnormally rapid formation.

A few days after the injection of germanium dioxide into these rabbits there was in some instances a tendency to transient elevations of the red cell count, but it is evident that no definite signs of increased blood formation or erythropoiesis occurred. The red cell rises were essentially no different from those observed in control examinations so that the deduction that they were not due to germanium is permissible.

The blood of eight patients with anemia (two cases of pernicious anemia, one of severe purpura hemorrhagica, one of chronic lymphatic leukemia, two of anemia due to chronic blood loss, one of cancer of the stomach and one of chronic focal sepsis) was studied in the same manner as that of the rabbits, both before and after the administration of germanium dioxide. Four doses each of 200 mg. were given intramuscularly every other day to one case of pernicious anemia. The other individuals took 120 to 275 mg. doses by mouth. The patient with cancer received 600 mg. in four days and the one with chronic focal sepsis 1925 mg. in seven days. The remaining six cases each took about 1 gram in four to ten days.

There occurred in none of these eight patients any significant alteration in the numbers of reticulated red cells, platelets or bone marrow white cells, or in the characters of the bone marrow elements, so that there was no evidence to suggest any increase of marrow activity as a result of taking germanium. The red counts and hemoglobin of both cases of pernicious anemia, and the one of purpura hemorrhagica and of lymphatic leukemia, showed no rises during the observations. Following taking the drug, the red cells of the other four cases—the two with anemia due to blood loss and the one with chronic focal sepsis and the one with cancer—increased in a period of a few days 400,000 to 900,000 per cu. mm. Germanium was given to three of these latter cases about two weeks after the removal of the cause of the anemia. During these two weeks there occurred in all three a slight progressive increase of erythrocytes. No increase of the red cells prior to germanium administration was observed in the patient with cancer, who had become symptomatically better and had eaten more food than for some time during the two weeks prior to taking the drug. In the patient with cancer, and one of those with anemia from chronic blood loss, the rise after taking germanium amounted to 400,000 and 500,000 per cu. mm. respectively. The count fell in a few days to its previous level in the former case, and in the latter first decreased somewhat before continuing its slow upward course to normal, which it reached many weeks after the blood loss was stopped.

After germanium was taken by the second patient with anemia due to blood loss and the one with anemia due to focal sepsis, the relatively abrupt rise of the red cells amounted to 900,000 per cu. mm. in the former and 750,000 per cu. mm. in the latter. In both instances the count fell in a few days to just above its previous level and then continued slowly upwards with other abrupt rises and falls of a lesser degree.

The rises of the red cells in all of these patients can be paralleled by like increase in similar cases not taking germanium.

It seems from the observations summarized above, as well as those recorded by others, that germanium dioxide may induce a transient increase of the red cell count of the peripheral blood, but there is no evidence that it is a powerful erythropoietic stimulant.

There were no indications that any of the four

cases with anemia showing the transient abrupt red cell elevations, improved faster or were influenced more beneficially than many other cases which we have studied of the same types but not receiving germanium.

CONCLUSIONS

No evidence has been obtained suggesting that germanium dioxide has the power to increase blood formation or that it exerts any significant effect to improve the health of anemic individuals. Consequently the drug seems to be of no value in the treatment of anemia.

NOTE.—As this paper goes to press, we note the appearance of an article by M. R. Alexander in *The American Journal of the Medical Sciences*, 1923, 166, 256, entitled "Observation on the Action of Germanium Dioxide in Pernicious Anemia." Alexander observed no clinical improvement or increase of hemoglobin or erythrocytes in three cases of pernicious anemia following the administration of germanium dioxide by mouth and hypodermic injection of about 5 grams in the course of three to four weeks. In each case the germanium was administered at the rate of 100 mg. per kilo of body weight.

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Medical Progress

RECENT PROGRESS IN PHYSIOLOGY

BY PERCY G. STILES, BOSTON

Assistant Professor of Physiology in Harvard University

ONE of the regrets experienced by the teacher who looks back upon a term of years during which he has presented to his classes the alleged facts of Physiology must be the consideration that he has affirmed too much and too seldom admitted the need to suspend judgment. If his conscience is at all sensitive he must often be oppressed by the recollection of confident assertions which time has shown to have been wrong. In certain moods he may envy his younger colleagues their freedom from a guilty past. The busy student welcomes dogmatic teaching—the tone of finality—but, in general, his desire should not be gratified. We must be at pains to emphasize the incompleteness of experimental evidence and the supreme importance of preserving an open mind.

THE CARDIAC OUTPUT

What has been said is well illustrated in connection with the question of the systolic output of the heart. In times of great muscular activity the circulation of the blood is accelerated. The common belief has been that the requisite increase in the flow is secured by the coöperation of two factors: a quickening of the heart-rate and an augmented delivery at each beat. Thus, it has been supposed, that when the pulse is increased from 70 to 140 per minute there may be a simultaneous rise in systolic discharge from perhaps 60 to 120 c.cm. per beat with a consequent *four-fold* increase in the volume of the circulation. Able workers now deny that such variations in the systolic output of the ventricle are likely to occur.

The literature bearing on this subject has been fully reviewed by Yandell Henderson.[1] It is his conclusion, supported especially by the observations of Douglas and Haldane,[2] that the output of the heart at each beat is a nearly constant quantity. It is of the order heretofore held to be maximal, that is, upwards of 100 c.cm. It is now denied that this amount falls materially when exercise is followed by rest. In other words, the blood-flow through the system is directly proportional to the pulse frequency. This being the case the possible range of variation is less wide than has been maintained; it can hardly exceed 300 per cent. since the highest pulse-rate is not commonly over three times the lowest for a given subject.

If the ventricular output at rest is so much larger than we have been led to believe, it follows that the percentage utilization of the oxygen in the arterial blood (during rest) is lower than has been estimated. Instead of withdrawing about 30 per cent. of the available supply the resting tissues appear to satisfy their needs with 15 or 20 per cent. Under these circumstances the venous blood differs less from the arterial than we have assumed. The surplus of oxygen offered to the cells, and ordinarily unused by them, is remarkably large. Accordingly, the additional requirements of exercise can be met by a more extensive consumption of the oxygen of the blood without the demand for so great an increase in the circulating volume as the older figures have indicated.

A CARDIOVASCULAR FITNESS TEST

In this connection reference may well be made to a practical application of Physiology devised by Schneider.[3] It is reasonable to hold that when men are compared the most fit competitor is that one who can perform a set task with the least acceleration of the heart-rate and the most prompt return to normal. Other things being equal, his pulse at rest will be the slowest in the group. This is the subject who meets the demands of the occasion chiefly by a simple increase of his utilization of the oxygen at hand and whose circulatory apparatus is thus protected from strain. Schneider has worked out a numerical rating which can be quickly determined. The highest score is obtained by the individual who makes the following records: (1) lowest pulse-rate when reclining, (2) least increase on standing, (3) lowest rate standing, (4) least increase after exercise, (5) quickest return to original rate after exercise, (6) most marked elevation of systolic pressure on rising from a recumbent position.

The exercise dictated by Schneider to his subjects consists in stepping upon a chair and back to the floor five times in 15 seconds. The method makes it possible to classify large numbers of men in a limited time. It is an evident advantage that absolute strength and weight do not enter into the measurement. A high rating truly indicates fitness, the judgment being based in every case upon the actual physique of the subject tested.

A CATALYST FOR CELL DIVISION

Robertson[4] has lately called attention to facts which are not wholly novel but which have been too little considered. Experimenting with certain protozoa, he finds that their rate of division increases with the number in a drop of culture medium. Conversely, the frequency of division diminishes with dilution, so that the chances come to be against the increase or even the survival of solitary cells. The explanation of the facts, Robertson considers, may be somewhat as follows: Cell division, very probably, is motivated from within by an agent which is catalytic in nature. At the time when a cleavage occurs there may be an escape of this agent into the surrounding liquid. The presence of this catalyst at the external surface of neighboring cells may then reinforce any existing tendency toward division.

This is a very suggestive conception. In the light of it the cleavage of cells in a community of any kind is recognized to have, in a sense, an infectious character. Once under way it tends to accelerate and to extend from its original focus. Limits will be set by diminishing food supplies rather than by accumulating metabolites. Robertson refrains from entering upon a speculative discussion of his data and their possible application. No doubt this is a wise reticence. But the temptation to raise questions based on these results is a strong one. When a few bacteria enter the blood-stream and harmlessly disappear we usually attribute their extinction to germicidal properties of the plasma or to the phagocytes. We may also conceive that the wide separation of the invading cells inhibits their multiplication; the mutual stimulus is lost. On the other hand, in neoplasms the catalyst for cell-division may be concentrated to create the most disastrous of vicious circles.

"THE TREPPE"

It has been universally taught until quite lately that a muscle artificially stimulated after a period of rest gives for a time a series of contractions of increasing height. Definite fatigue is not indicated immediately but only after the execution of a moderate number of movements. This apparent increase in the response to repeated stimuli has long been known as the Staircase or Treppe phenomenon. It has been demonstrated for the ventricle after a quiescent interval. The Treppe has been described as a "warming up" of the muscle and it has been compared with the "practice effect" observed in industrial production. The validity of the records long employed to support the reality of the Staircase has been attacked in recent years but is once more stoutly defended.

The claim has been made that the Treppe has no existence, so far as the muscle is concerned, but that its appearance in tracings is the result of instrumental error. This destructive criticism came at first from a German writer and it has been endorsed by the physiologists of Cambridge, England. Without going into the details of the argument one may say that the failure of the earliest contractions in a series to register the maximum height is ascribed to an extreme rapidity of shortening. It is maintained that, owing to inertia, an ordinary lever is not so well able to follow such abrupt movements as it is to record those which come later when there has been some slowing of the process.

An attempted vindication of the Treppe has been published by Gruber.[5] He has carefully measured the time occupied by the muscle of a warm-blooded animal in contracting against the resistance of a spring. He finds no evidence that the early movements in a succession are more rapid than those which are made a little later. Yet the increase recorded in the extent of shortening has been exceptionally marked. It has sometimes amounted to 40 per cent. It appears difficult to explain away the testimony of Gruber's curves. The reviewer regards them as convincing and adheres to his faith in the Treppe. However, it is another question whether the analogy between this laboratory

phenomenon and the "warming up" of human experience is well conceived. The voluntary use of the muscles involves the governing centers, the circulatory, and the breathing apparatus. The betterment secured by making a few preliminary movements may be due in great part to adaptive changes in these systems. Moreover, voluntary contractions are tetanic in nature and it is not known that the Staircase can be demonstrated in a series of such responses.

THEORY OF MUSCLE CONTRACTION

The source of the energy displayed by active muscles continues to be the subject of experiment and discussion. Some years ago we were obliged to abandon the attractive idea that a muscle closely resembles a steam-engine in which heat evolved from burning fuel is partially transformed into work. The newer description has represented it as more truly analogous to a motor driven by a storage battery. The oxidation of fuel, with its provision of a fund of energy, has been recognized as serving to restore or recharge an accumulator mechanism.[6] The analysis of the problem has now been carried so far as to be limited to a few investigators highly trained in mathematics and the technique of physical chemistry.

One of the ablest of these men, Meyerhof of Kiel, has recently visited this country. In his addresses he has told of the latest progress in his difficult field. He lays stress on the following points: The conversion of glycogen to lactic acid which immediately results from effective stimulation may account for something like half the energy exhibited by a contracting muscle. This is a larger proportion than the older figures allowed. The remainder of the energy must be referred to some other source, probably a change in the colloid state of the muscle substance. If energy is released by such a change (perhaps from ionized to non-ionized condition) the oxidative reaction which normally follows must repay energy in an equivalent amount to restore the *status quo*. The demand for a "lactic acid precursor" more energetic than carbohydrate seems to be obsolete.

AN INDICATOR OF ADRENAL SECRETION

It has been known for a long time that the removal of the superior cervical ganglion sensitizes the iris on the same side to the influence of adrenin. Small doses thereafter dilate the pupil in a striking degree. The iris in such cases has retained the constrictor innervation represented by the third cranial nerve. Hartman, McCordock, and Loder[7] have mastered the delicate operation required to remove the ciliary ganglion from the orbit of the cat with the result that, when the superior cervical ganglion also is excised, a complete denervation of the iris is effected. The pupil then becomes an ideal indicator of extra adrenin in the circulation. It dilates under the same conditions which are signalized by acceleration of the denervated heart.

Attempts have been made to determine what circumstances most surely induce adrenal activity in the cat. Excitement, such as could be developed by the close proximity of a barking dog, had but little effect on the sensitized iris. Electrical stimulation of the ear (pain) had more; the response to chilling by a cold bath was still greater. Brief asphyxia caused the widest dilation obtained. The pupil indicated a discharge of adrenin during surgical procedures in spite of ether anaesthesia.

The paper reviewed is an important contribution to a protracted discussion as to whether the adrenal medulla liberates its secretion continuously or on occasion. The authors show that the latter theory is supported. This is the well-known Emergency Function of Cannon's exposition. To those who have been impressed by previous evidence in favor of this view the negative result in excitement is unexpected. But positive findings in the other cases when the animal has been forced to contend with disturbing conditions appear to outweigh the failure in trials of the first type.

HIGH PROTEIN FEEDING

Drummond, Crowden, and Hill[8] have reported an interesting research on the health and development of young rats and kittens furnished with a diet containing a maximum of protein. The animals were given caseinogen with a carefully prepared salt mixture and the necessary vitamines. Control animals received the same diet with the addition of starch and fat. The growth of the rats was much retarded. The males practically ceased to gain at a level which was 58 per cent. of that reached by the controls. The females on the protein ration reached 76 per cent. of the corresponding standard. The controls matured and had young while the protein-fed rats failed to breed. The kittens showed a rather similar stunting.

The assumption is often made that the kidneys must suffer from the demands of an abnormally high protein metabolism. There were no renal symptoms in these animals and no pathological changes were detected in the kidneys post mortem. It was noted, however, that the viscera of the protein-fed rats had an odor more offensive than that of the controls. The kittens on the high nitrogen allowance seemed lame at times but this was corrected by a slight increase in the quantity of shark's liver oil (fat-soluble vitamine) supplied. In general the condition of all the animals remained good.

In cases where animals fail to grow normally on peculiar diets it is always important to be assured that they have eaten an ample quantity.

If the food does not attract them they may not take enough to promote their growth; the difficulty is then a matter of amount and not of quality. This possibility has been considered in the present instance and the authors are convinced that the calorie consumption was liberal. They do not make any evident allowance for the "specific dynamic effect" of so much protein, a factor which would render an extra large ration necessary.

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PROGRESS IN PULMONARY DISEASES

BY JOHN B. HAWES, 2D, M.D., BOSTON, MASS.

THE literature on the subject of pulmonary diseases, and particularly on tuberculosis, continues to be immense. This fact alone shows conclusively enough the importance of the subject. It is manifestly impossible to refer to even a small portion of the excellent work which has been done during the past year. I can merely give a brief summary of the more important work and my own personal impressions concerning progress in various directions.

DIAGNOSIS

There have been no striking changes during the past year in the diagnosis of pulmonary diseases. There is a growing tendency, which I welcome, to put more reliance on a careful history, physical examination and study of the patient's symptoms, temperature and pulse, etc., rather than on certain so-called pathognomonic signs or on laboratory findings. In other words, we are studying the patient rather than his disease. There are still x-ray enthusiasts, however, who believe that the clinician should be replaced by the roentgenologist as far as diagnosis is concerned.

Ornstein, G. G. (*New York M. J.*, 117:19, Jan. 3, 1923), discussing this subject, states that in 91 per cent. of 100 x-ray interpretations x-ray examination agreed with clinical findings with special reference to activity.

Although in his 100 cases this, doubtless, was perfectly true, it is a dangerous doctrine to preach and should not be advocated as a general measure of determining activity. This should be left to the clinician.

Ringer, P. H. (*Am. J. M. Sc.*, 165:742, May, 1923), on the same subject, bases his estimation of the presence of tuberculous activity on five points as follows:

1. Palpatory, which has found but little favor at the hands of the profession as a whole;
2. Roentgenologic, which as the sole evidence of active tuberculosis should not be relied on;
3. Auscultatory, which, in estimation of activity, should be restricted to the presence, location and character of râles, and should not be concerned with breath sounds. It is an indisputable fact that true moist râles denote an active process;
4. Laboratory methods. He does not believe that the presence of tubercle bacilli in the sputum is of itself evidence of active tuberculosis.
5. Symptoms. This of itself furnishes the principal evidence of activity.

With these five points I am in hearty accord, with the exception of No. 3, where he states that "It is an indisputable fact that true moist râles denote an active process." Many observers, including myself, would not agree with this but believe that there are numerous patients whose tuberculosis is thoroughly walled off and who are absolutely without symptoms of general toxemia but who have a certain amount of cough, sputum and râles for an indefinite period. Likewise, I do not feel that he sufficiently emphasizes the importance of symptoms as the true criterion of activity.

Bissell, F. S. (*Canad. M. A. J.*, Montreal, 12:836, Dec., 1922), believes that too much reliance has been placed upon the so-called "fan" or "cone" and believes that many diagnoses of early tuberculosis must be made without this aid. He believes that peribronchial infiltration is much more characteristic of other infections or bronchial irritants and should receive little consideration in the diagnosis of tuberculosis.

This is the view generally accepted by the best roentgenologists of this country at the present time. He takes the proper stand in believing that the question of activity can usually be determined by clinical evidence, and in stating that the roentgenologist cannot with conservatism venture a prognosis in a given case. A negative x-ray report has not been given the high place which it deserves. He believes that it is doubtful whether a diagnosis of pulmonary tuberculosis is ever justified in the face of repeated negative roentgenologic findings. This statement, emphasizing the word "repeated," is doubtless a sound one, but is dependent to a large extent upon the skill and experience of the roentgenologist.

Frazer and MacRae (*New York M. J.*, 117:34, Jan. 3, 1923), on the other hand, believe that not only should the roentgenologist make a definite diagnosis but may express a prognosis from the x-ray findings alone.

The conservative clinician will not agree with any such doctrine as this.

Hawes (*Boston Med. and Surg. Jour.*, 187: 928, Dec. 21, 1922) calls attention to the alarmingly large proportion of patients who come to our public dispensaries and out-patient departments for diagnosis, fail to return to have the diagnosis made certain when it is in its early stages and so drift from place to place until the disease becomes advanced. He outlines a plan whereby this can be to a large extent prevented.

This situation, which is well known to exist in Boston, doubtless exists to an equally or even greater extent elsewhere and is one which calls for attention and action.

Heise and Brown (*Am. Rev. Tuberc.*, 6:1078, Feb., 1923) present an analysis of 1000 patients entering the Trudeau Sanatorium with regard to the frequency of hemoptysis, pleurisy, râles, tubercle bacilli and x-ray findings.

Their conclusions are of distinct value and confirm their work, already published, on the diagnosis of pulmonary tuberculosis by means of the five points laid down by Brown: (1) tubercle bacilli in the sputum, (2) localized persistent râles at one or both apices, (3) confirmatory parenchymatous x-ray lesion, (4) history of a hemorrhage, and (5) history of pleurisy with effusion.

Landis, H. R. M. (*Ther. Gaz.*, 46:837, Dec. 15, 1922), taking up the non-tuberculous complications of tuberculosis, believes that there is little to warrant the view that cardiac disease is antagonistic to tuberculosis.

It is refreshing to have this statement made by an authority. Most of us have been taught that cardiac disease, particularly mitral stenosis, is incompatible with tuberculosis. Some years ago I came to the conclusion that such was not the case. The combination of tuberculosis and syphilis Landis believes to be a most vicious one.

Much work has been done on certain pulmonary conditions due to syphilis, streptothrix and other non-tuberculous organisms as well as to certain forms of inorganic dust. These investigations are of the utmost importance in diagnosis and differential diagnosis. As a result of our modern campaign for the early recognition of tuberculosis in Massachusetts, at least, the condition has arisen where it seems to be taken for granted, among the younger men especially, that any cough and all lung symptoms, particularly if accompanied with loss of weight and strength, must necessarily be due to tuberculosis. One of the chief functions of those of us engaged in chest work, and especially when dealing with ex-service men who have been gassed or who have had influenza, is to undo diagnoses of tuberculosis and the harm that has been caused thereby.

Munro, W. T. (*Lancet*, London, 203:1376, Dec. 30, 1922), discusses pulmonary syphilis. Its prognosis depends upon its early recognition and prompt treatment. In fibroid cases symptoms may disappear but a complete return to normal is not to be expected.

Weiss, R. F. (*Beitr. z. Klin. d. Tuberk.*, Berlin, 54:165, Feb. 17, 1923), takes up the subject of the influence of syphilis on the development and course of tuberculosis. This latter may be influenced either favorably or unfavorably by anti-syphilitic treatment. Unfavorable results are rare, especially with the use of salvarsan. He does not believe that active tuberculosis is a contraindication for anti-syphilitic treatment, although there are many observers who would maintain that iodide of potash should not be a part of such anti-syphilitic treatment.

Personally, I cannot recall a case where I can persuade myself that small doses of iodide of potash, whether given direct or in the form of hydriodic acid, have ever done any harm in a case of active tuberculosis if given for only a short period of time in moderate dosage.

Engelsen, H. (*Norsk Mag. f. Laegevidensk.*, Christiania, 83:1016, Dec., 1922), describes a case of bronchial spirochetosis. He believes that conditions due to this and similar organisms are more common than is thought to be the case.

Iacono (*Riforma med.*, Naples, 38:1181, Dec. 11, 1922), Pesce and Quaranta (*Rev. Sud-Am. de endocrin.*, etc., Buenos Aires, 5:549, Dec. 15, 1922), Besser, H. (*New York M. J.*, 117:623, May 16, 1923), and others, take up the same subject.

Montgomery, C. M. (*Internat. Clin.*, 1:138, Ser. 33, 1923), considers that interesting lung condition in which the process is located at the base of the lung rather than at the apex or the hilus. The symptoms he groups under toxic, local or pulmonary, and mechanical. In each of these syphilis of the lung must be excluded.

Dunham and Skavlem (*Jour. Radiol.*, 4:37, Feb., 1923), from the x-ray point of view discuss the relation of certain non-tuberculous processes such as bronchitis, bronchiectasis, broncho-pneumonia, etc., to infections of the upper respiratory tract, particularly sinus disease, while Hawes (Boston Med. and Surg. Jour., Aug. 2, 1923) takes up the time-worn subject of "chronic bronchitis," coming to the same conclusions as the previous writers,—that the relation of this trying and common condition to infections of the upper respiratory tract is a very close and important one.

Landis, H. R. M. (*Am. Rev. Tuberc.*, 6:766, Nov., 1922), Hoffman, F. L. (*Am. Rev. Tuberc.*, 6:722, Nov., 1922), Gardner and Dworski (*Am. Rev. Tuberc.* 6:782, November, 1922), Willis, H. S. (*Am. Rev. Tuberc.* 6:798, November, 1922), Steuart, W. (*Arch. Radiol. and Electrother.*, London, 23:277, Feb., 1923), and others, have studied the subject of inhalation of vari-

ous forms of inorganic dust and its relation to the development of tuberculosis. This work, added to the most important investigations of Jarvis under the National Tuberculosis Association as carried on among the granite-workers of Vermont, has thrown a great deal of light on a subject concerning which we have known but little. It has usually been taken for granted that all such cases, if not tuberculous in the beginning, end by becoming so. It is distinctly helpful and encouraging to have it clearly demonstrated that such is not always or necessarily the case.

TUBERCULOSIS IN CHILDHOOD AND INFANCY

A great deal of work has been done during the past year on the detection and, particularly, on the prevention of tuberculosis in childhood. While nothing particularly new has been added to our knowledge of this subject, the importance of prevention instead of treatment, as far as tuberculosis is concerned, has been made clear and definite. Likewise, as to diagnosis it has been shown that we have put altogether too much faith and reliance on certain signs such as d'Espine's, Eustace-Smith, interscapular and intervertebral dullness, unequal pupils, hoarseness and enlarged veins on the chest as of importance in the diagnosis of enlarged bronchial glands and, particularly, as to tuberculosis of the bronchial glands.

Braeuning and Hollmann (*Zeitschr. f. Tuberk.*, May, 1922, xxxvi, 255) discuss the various measures that they have tried in prophylaxis. In some instances this consisted of the removal of the children from the house inhabited by the tuberculous adult, as is being done on a limited scale by means of preventoria at Toronto, Providence, Detroit, Boston, and elsewhere in this country; in others the tuberculous patient was isolated in the house while the children were allowed to remain; and, finally, the removal of the sick patient from the home to the proper institution. According to their figures, the first measure proved successful in 153 cases, the second in 536, the third in 70 cases. They believe that success can only be achieved by an educational campaign, teaching the children methods of infection of tuberculosis as well as enforcing a rigid anti-cough and anti-spitting discipline.

It would be interesting to know exactly what these writers would call "success" in what they attempted to do. As stated above, in this country the removal of children from tuberculous adults and infected homes to a preventorium is a generally accepted method, while the hospital for the advanced consumptive is the second. Along with such removal of children and adults, educational measures such as the Health Crusade and careful follow-up work must be carried on.

Ramsey, W. R. (*Journal-Lancet*, 43:192, April 15, 1923), summarizes this subject by stating as his belief that all persons should be examined for tuberculosis, that all active cases should be isolated, that all cattle should be tested and all milk pasteurized to prevent young children, who are already infected, from developing active tuberculosis. They must be protected from massive infection, preventoriums should be encouraged, housing conditions must be improved, and all classes, beginning with physicians and health officials, should be educated as to the essentials of proper living and, finally, the government, medical societies and individuals should be encouraged to promote the immunizing of young children against infection.

Fleischner, E. C. (*J. A. M. A.*, July 15, 1922, lxxix, 175), takes up the diagnosis of non-tuberculous disease of the bronchial lymph nodes in children. He believes that there are five conditions other than tuberculosis which may cause the enlargement of bronchial glands,—malnutrition, subacute bronchitis, whooping-cough, various chronic fevers, and asthma. The most important question for differential diagnosis is the possible presence of tuberculosis, which he believes can best be established by the use of tuberculin.

Hawes (*Am. Rev. Tuberc.* 6:7, September, 1922) considers the same subject.

The preventorium and its importance in the campaign to prevent the tuberculous infection of children from becoming adult tuberculous disease later on is well presented in an article by Clifford (Boston Med. and Surg. Jour., 188:66, Jan. 18, 1923). His article is based largely on the work now being done by the Boston Tuberculosis Association in carrying on its preventorium recently established in this city. Other references on this subject are as follows:

"Data in Three Thousand Seven Hundred and Forty-two Pirquet Tests," S. McLean and H. Jeidell, *Am. J. Dis. Child.*, July, 1922, xxiv, 73.

"Die Tuberkulose in Säuglingsalter," R. Fischl, *Arch. F. Kinderhk.*, lxxi, February 21, 1922, 6.

"La forme floride de la tuberculose du nourrisson," R. Debré and P. Joannon, *Ann. de Méd.*, April, 1922, xl, 336.

"Uber Säuglinge tuberkulöser Mütter," K. Barchetti, *Matschr. f. Kinderhkr.*, September, 1921, xxi, 563.

"The Frequency of Tuberculosis in Childhood," F. Hamburger, *Am. J. Dis. Child.*, June, 1922, xxiii, 481.

"D'Espine's and Allied Signs in Childhood," J. L. Morse, *Archives of Pediatrics*, June, 1922, xxxix, 355.

TREATMENT

There have been innumerable articles on the subject of pneumothorax, chiefly favoring this

method of treatment. I am unable to see that any striking changes have been made during the past year in our attitude toward this important method of procedure. The number of ardent enthusiasts who advocate its use in every instance, and who believe that the earlier and more favorable is the case the more reason is there for pneumothorax, are decreasing, while those who believe that it should be used only in institutions or when the patient is under absolute and prolonged supervision, and that each case should be carefully individualized and studied before the pneumothorax is begun, I am thankful to state, seem to be on the increase. Rich, H. M. (*Am. J. Med. Sc.*, September, 1922), advocates its use in certain non-tuberculous lung conditions. He reports successful results by means of pneumothorax in a small number of cases of lung abscess; others report good results with bronchiectasis. In both abscess and bronchiectasis, however, success depends practically entirely upon the early diagnosis and early institution of this treatment, otherwise the presence and formation of adhesions will prevent its being of any value.

Numerous articles have appeared during the past year showing the late results of treatment with Friedman's vaccine, which prove conclusively its worthlessness. Other work has been done on the use of copper salts and other preparations containing iodine and, particularly, chaulmoogra oil in the treatment of tuberculosis, which likewise have been without result. The following references on this subject are typical and are of interest:

"The Application to Tuberculosis of the Successful Treatment of Leprosy by Soluble Preparations of Chaulmoogra, Cod-Liver and Other Oils," L. Rogers, *Brit. J. Tuberc.*, July, 1922, xvi, 110.

"The Chaulmoogra Oil Treatment of Tuberculous Laryngitis," R. A. Peers and S. J. Shipman, *J. A. M. A.*, August 5, 1922, lxxix, 461.

"Chaulmoogra Oil in the Treatment of Tuberculous Laryngitis," F. L. Alloway and J. E. Lebensohn, *J. A. M. A.*, August 5, 1922, lxxix, 462.

Swan, W. H. (*Wisconsin M. J.*, 21:261, Dec., 1922), discusses tuberculosis as a chronic disease from the human point of view, stating that the tuberculous patient cannot be left to shift for himself when he returns to his work, and must have what is called industrial convalescence and sheltered employment under medical supervision in special factories, agricultural and industrial colonies.

The Boston Tuberculosis Association has recently started in on just this line of work. A full-time worker has been employed who, under a proper committee, will attempt to fit the discharged sanatorium patient into the proper work under proper supervision where he can be an economic asset and still retain his health. It is along this line that great advances in the future handling of the tuberculosis campaign will be made.

The sanatorium continues to be our main reliance in the successful treatment of tuberculosis. Consultation clinics at sanatoria, and itinerant clinics where the superintendents and other members of the sanatorium staff go on a schedule to various points in their district examining patients and giving clinics, are increasingly important factors in proper sanatorium treatment. The care of the consumptive after his discharge from the sanatorium is likewise one of the most important parts of the sanatorium work in the community.

Allbutt and Varrier-Jones (*Lancet*, July 8, 1922, ccii, 105), present this subject of sanatorium treatment strikingly and well. They discuss the defects of our present mode of treatment of tuberculosis. The fact that many of our sanatoria are intended for early cases and that only a small proportion of really incipient cases find their way to such institutions is one of the defects. Failure to bring about an actual arrest of the process and a failure to ascertain the patient's real capacity for his work is another serious fault. It is necessary to find out under what conditions a damaged organ may "carry on" effectually, and just how much and what kind of work can be performed by the organism as a whole without recrudescence of the disease.

These defects and particularly the lack of cooperation between the sanatorium and the municipal officials and the patient's private physician are as evident with us as they are abroad.

The problem of tuberculosis and its diagnosis and treatment among ex-service men seems to be just as acute now as it was shortly after the war. Cumming, H. S. (*Jour. A. M. A.*, July 29, 1922, lxxix, 370), than whom there is no other in this country who is better qualified to take up this subject, presents an authoritative and scholarly article on this subject. Up to May, 1922, approximately 65,000 veterans were admitted to hospitals with the diagnosis of treatment of tuberculosis. He notes the prevailing impression that war gases were not an important cause of clinical tuberculosis. The difficulty in treatment is the restless mental attitude of patients as shown by the large number who left sanatoria and hospitals against advice and without permission. Approximately one-third of all veteran hospital patients are tuberculous.

MISCELLANEOUS

Bloomfield, A. L. (*Bull. Johns Hopkins Hosp.*, 34:65, Feb., 1923), discusses the effect of antiseptics on the bacterial flora of the upper air-passages. He comes to the very sane conclusion that it is unlikely that chemicals applied

to the mucous surfaces could effect sterilization without destroying the superficial layers of epithelium at the same time. He advises the use of bland washes, such as salt solutions, rather than silver and mercury.

Trudeau, F. B. (*Jour. A. M. A.*, 80:831, March 24, 1923), has analyzed 980 consecutive admissions to the Trudeau Sanatorium in order to determine the influence of various symptoms such as fever, rapid pulse, hemoptysis, gain or loss of weight in prognosis. This article is of distinct practical value.

Alwens and Flesch-Thebesius (*Beitr. z. Klin. d. Tuberk.*, Berlin, 54:299, March 12, 1923), in an article on lung examinations in patients with surgical tuberculosis, urge that in every case of so-called surgical or non-pulmonary tuberculosis the lungs be carefully examined. They believe that every case of surgical tuberculosis is the result of an open or healed pulmonary tuberculosis. Whether this is so or not, their advice in regard to the examination of the lungs is sound.

Original Articles

THE EFFECT OF TRACTION UPON THE SPINAL COLUMN AND UPON INTRASPINAL PRESSURE

BY M. PIERCE RUCKER, M.D., RICHMOND, VA.

BIRTH trauma is potentially so common and its effects, both immediate and remote, are so disastrous, that any consideration of this subject that is well thought out, it matters not from what angle, is important. Crothers[1] has presented the question of brain and spinal cord injuries in breech extraction, in a novel, interesting and stimulating manner. These structures, he points out, are contained in a bony cavity which is divided into three communicating compartments by dense membranous or bony partitions. The cerebrum is separated from the midbrain by the tentorium cerebri. The midbrain with its vital centers in the medulla, lies just above the foramen magnum. Normally there is a free communication between the three chambers, and the cerebro-spinal fluid in all three compartments is presumably under the same pressure. In breech extraction, Crothers pictures the changes that take place in this pressure as follows: First, there is pressure on the cranium which raises the pressure about the cerebrum and forces the brain substance downward against the foramen magnum. The increased intracranial pressure causes a rise in the blood pressure, which still further increases the pressure within the cranium, resulting in an anaemia of the whole central nervous system. Next, there is traction on the spinal column which elongates that structure and often disrupts the intervertebral disks. The effect of this is to lessen the pressure of the spinal fluid and still further favor the impaction of the medulla at the foramen magnum. The resulting ischemia of the medullary centers is the cause of the "white asphyxia" and requires a different method of resuscitation from those generally in vogue. Crothers states that the chief criticism of his work is that it was done in the laboratory and the library, and not in the delivery room.

The present study is an attempt to bring the laboratory and the library a little closer to the delivery room. In the first place it would seem desirable to know what effect traction on the spinal column actually has upon intraspinal pressure in the cadaver of the new born infant. The anatomical relations are the same whether the infant be dead or alive. The only conceivable differences are (1) a loss of tone of the muscles and ligaments supporting the vertebrae and (2) a diminution of the amount of spinal fluid after death. The effect of traction would therefore be, *a priori*, greater in the dead infant than in the live one. In the second place, it would be desirable to know whether there is a measurable difference in the length of the trunk of babies delivered by breech extraction and those delivered spontaneously and by forceps. According to Noback[2] and Calkins,[3] there is a definite ratio between the length of the trunk (sitting height) and the total length (standing height) of fetuses and infants. The ratio is expressed by the formula, CH (total length in mm.) $= \frac{3CR \text{ (trunk in mm.)} - 3}{2}$

In other words, if these two measurements be plotted on ordinate paper, the sitting height as the abscissa and the total height as the ordinate, the resulting curve would be a straight line. If this relationship be disturbed by undue stretching of the spinal column then the result would deviate from the straight line, especially in the larger infants where traction would likely be greater, just as Calkins found that moulding of the head in head presentations disturbed the relationship of the head measurements to the total length.

For the first part of this work, use was made of infants dying in the course of spontaneous deliveries. These bodies were kept upon ice until the time of the experiment. Lumbar puncture was made in the usual manner and the needle was connected with a water manometer.

EXPERIMENT 1.—Forty-eight hours after delivery, premature stillborn fetus. In the lateral prone position the crown rump measurement was 26 cm. The manometer was set to read 100 mm. of water, and was connected with the needle immediately after the lumbar puncture was made. The fetus was suspended by the heels. The crown rump measurement

was still 26 cm. The column of water rose to 104 mm. and then dropped to 90 mm. at once and in a few minutes reached 75 mm. When the head was pulled upon, the pressure fell to 60 mm. When traction was made with the fetus in the lateral prone position the pressure went up to 160 mm. and remained. The fetus was suspended by the chin and occiput and the pressure rose to 180 mm. at once and remained for a few moments and then gradually rose to 205 mm. The fetus was put back to the recumbent position and the pressure dropped to 175. It was then suspended by the heels and the pressure dropped to 135. Put back in the prone position and the pressure was 140 mm. Traction in the recumbent position, one hand grasping the feet and the other the chin and occiput, caused an immediate drop to 105 mm. and then a gradual rise to 220 mm. The traction was released and the pressure gradually fell to 205 mm. The crown rump measurement was now 27 cm. After the measurement was taken the reading of the manometer was 170 with the fetus' thighs extended. The thighs were flexed and the pressure fell to 150 mm. Moderate pressure upon the cranium caused the pressure to rise to 300 mm.

Experiment 2—Stillborn infant with crown rump measurement of 29 cm. The experiment was conducted 24 hours after delivery. The puncture was a dry one. The needle was connected with the manometer and the manometer was set at 100 mm. The infant's feet were elevated 30°. There was no change in the pressure. The infant was then laid prone on the table and the pressure rose to 105 promptly and slowly to 110 mm. Head was elevated 45° and there was no change in the reading. Back to level and the pressure rose to 115. Feet elevated 45° and the pressure fell to 110. Back to the level again and the pressure rose to 115 mm. The baby was held by the heels in a vertical position without any tension on the spinal column, and there was no change in the reading of the manometer. The body was held in an upright position and the pressure rose to 125. With the infant in horizontal position the thighs were sharply flexed on the abdomen and there was no change in the manometer. The thighs were extended and still there was no change. Moderate traction was made with the baby in a lateral prone position and the pressure rose to 137.5 mm. The traction was released and there was no change in the reading. The baby was suspended by the heels and the pressure went slowly down to 105. Moderate traction was now made on the occiput and chin with the baby still in the vertical position and the pressure sank to 100. The traction was released and the pressure remained the same. The body was suspended by chin and occiput, and there was no change in pressure. Traction upon the feet and the pressure rose slowly to 102.5 mm. The baby was placed in left lateral horizontal position and the pressure went to 105. The baby's trunk now measured 30 cm. Pressure upon the head caused the pressure to rise to 140 mm.

The next day the experiment was repeated. The body was suspended by the heels and there was no change in pressure. It was then suspended by the head and the pressure rapidly rose from 100 to 300 mm. of water and was still rising when the body was placed in horizontal position. The pressure then fell to 200. The thighs were flexed and the pressure fell to 180. The thighs were extended and the manometer rose to 190. The thighs were flexed and the pressure fell to 170. When they were again extended the pressure rose to 185. The spinal canal was injected with formalin and the cranium was opened. There were old adhesions over the occiput. The tentorium and falx were intact.

Experiment 3—The trunk measured 26 cm. The manometer read 104 immediately after the puncture. When the body was suspended by the heels the pressure dropped to 90 at once, and in a few minutes reached 75 mm. of water. When the head was pulled upon it reached 60 mm. Traction of 20 lbs., as measured with a pair of baby scales, was made with the body in a horizontal position and the pressure went up to 160 and remained. When the body was held up by the chin and occiput the pressure went up to 180 and then gradually rose to 205. The body was put back in the horizontal position and the pressure dropped to 175. The body was suspended by the heels and there was a further drop to 135. It was put back in horizontal position and the pressure rose to 140. Traction in the recumbent position and the pressure dropped to 105 immediately and then gradually rose to 220. The traction was released and the pressure fell to 205. The trunk now measured 27 cm. Pressure upon the head made the pressure rise to 300.

Experiment 4—The trunk measured 27 cm. 24 hours after stillbirth. The manometer was set at 100 mm. of water with the body in lateral prone position. When the body was suspended by the heels there was a drop to 72½ mm. The baby was again placed in the horizontal position and the pressure rose to 100. Suspended by head and the pressure rose to 105. Suspended by the head and the body stretched and the pressure fell to 95.

Experiment 5—An effort was made to show these changes graphically, but I was unable to get a float and writing point to work satisfactorily on a water manometer. In this experiment I therefore used a mercury manometer. The subject was that of a 10-day-old infant dead of pneumonia. The experiment

was undertaken four hours after death. Changes in posture, traction upon the spinal column or pressure upon the cranium caused no changes in the manometer. Flexion of the body caused a gradual fall in pressure as is shown in the figure.

At point marked "111" strong traction was made on head and heels. At point marked "1111" the body was strongly flexed.

To those present when these experiments were performed, it was very noticeable that there were two kinds of reactions, the first immediate as one would expect to get in dealing with fluid, and the second appearing more slowly and continuing for several minutes. Usually the two reactions were in the same direction, but occasionally they were in opposite directions. The first explanation that occurred to me was a ball-valve action of the medulla at the foramen magnum which would be exaggerated in those fetuses in which most of the spinal fluid had disappeared. This may be a factor in certain instances. However in most instances this phenomenon is to be explained by the fact that cranium and spinal canal contain a fluid, the spinal fluid and a semifluid brain and spinal substance. In all the experiments except No. 4 suspending the baby by the chin and occiput caused a greater change in the pressure than when it was suspended by the heels. In the upright position the weight of the soft brain increased the intraspinal pressure, whereas when the head hung downward the inelastic dura, attached as it is so intimately to the inner surface of the skull supports the brain and prevents it from exerting a negative pressure upon the contents of the loose and roomy spinal cord dura. The changes in spinal pressure that were induced by either posture or by traction on the spinal column, while definite, were not very great. Postmortem changes seemed to increase them. Suspending the body by the feet caused a fall in pressure, and by the head a rise in pressure, usually a greater rise. Traction on the spinal column caused even a greater rise in pressure in most instances. Occasionally there was a slight initial fall of a few mm. of water. The most marked change was caused by moderate pressure upon the cranium.

The relationship of the length of the trunk to the total length of the infant can be shown graphically by plotting each case on ordinate paper using the two measurements as abscissa and ordinate, or it can be expressed in figures in the form of a coefficient of correlation by means of the Pearsonian formula. For the purpose of comparison the figures are preferable, and more accurate. I have available for this study the notes upon 597 infants delivered between Januray first, 1920, and March 31, 1922. Three hundred and sixty-eight were delivered by version and breech extraction and 229 were delivered cephalically. Unfortunately some of the measurements were made by internes and no especial care was taken in checking them up. On the other hand all the measurements were taken before Crothers' article appeared and are therefore free from any possibility of personal bias. In the cephalic group the total length averaged 50.06 cm. The shortest baby measured 31 cm. and the longest 59 cm. The standard deviation was 3.64. The average crown rump measurement of this group was 31.81 cm., the smallest being 21 cm. and the largest 37 cm. The standard deviation was 2.49. The coefficient of correlation between these two measurements was .88552 with a probable error of $\pm$.009624.

For the breech group the average total length was 49.82 cm. with extremes of 17.5 and 60 cm. The standard deviation was 4.25. The average trunk measurement was 31.63, the extremes being 12 and 42 cm. The standard deviation for this measurement was 2.82. The coefficient of correlation between trunk and total length for the breech group was .90889 with a probable error of $\pm$.006112. It will thus be seen that measurements as ordinarily practiced in the delivery room, show practically no difference in the two groups. What little difference there is, is in favor of the breech group. In other words there certainly has not been introduced into this group any cause for a variation in the length of the spinal column.

REFERENCES

1 Crothers, Bronson: The Effect of Breech Extraction upon the Central Nervous System of the Fetus, Medical Clinics of North America (Boston Number) March, 1922, p. 1287.
2 Noback, G. J.: Simple Methods of Correlating Crown-rump and Crown-heel Lengths of the Human Fetus, The Anatomical Record, xxiii, 241, 1922.
3 Calkins, L. A.: Morphometry of the Human Fetus, with Special Reference to the Obstetric Measurements of the Head. Am. Jour. Obstet. and Gynec., iv, 109, 1922.

A FEE LIST FROM THE PAPERS OF ARCHELAUS GREEN SMITH, M.D.

(1792 to 1850.)

BY STANLEY COBB, M.D., BOSTON.

AMONG many old papers in my uncle's house we recently found a diploma, a certificate, and a list of charges which belonged to my great-grandfather, Archelaus Green Smith. This list of charges is reproduced herewith and reads as follows:

A list of Medical and Surgical charges established by the associated Physicians and Surgeons of the City of New York December, 1815, and approved by the New York County Medical Society, January 2, 1816.

Verbal advice	from 00 to $5.00
Letter of advice	from $10 to 15.00
Ordinary visit	from 0 to 2.00
Consultation do.	5.00
After visits each	3.00
Night visits	7.00
Visit at a distance, per mile	1.50
Do. to Brooklyn	3.00
Do. to Pawles Hook, summer	5.00
Do. to Staten Island	10.00
Both these last to be doubled in winter or storm.	
First visit in epidemic, as other diseases; when personal danger is apprehended	5.00
Each succeeding, same circumstances	3.00
Vaccination	$5 to 10.00
Each dressing of a wound	1 to 5.00
Cupping	5.00
Bleeding in arm or foot	2.00
Do. in jugular vein	5.00
Dressing blister	1.00
Scarifying eye	5.00
Puncturing oedema swellings	2.00
Inserting seton	5.00
Do. issue	2.00
Visits in haste to be charged double.	
Detention per hour	3.00
Do. per day	25.00
Introducing catheter	5.00
Each succeeding time	2.00
Do. in females	5.00
Extracting calculus from urethra	20 to 30.00
Reduce simple fracture	10 to 20.00
Do. compound	30.00
Do. dislocations	5 to 20.00
Do. of the hip	30 to 50.00
Reducing prolapsus ani	5.00
Do. hernia	$10 to $25
Opening abscess	1 to 5.00
Amputation of the breast	50.00
Do. leg	50.00
Do. hip or shoulder	$100 to $150.00
Do. finger or toe	10.00
Do. penis	20.00
Extirpation testis	50.00
Do. eye	100.00
Do. tonsils	25.00
Do. tumor	$5 to 50.00
Perforating rectum	25.00
Do. nostrils, external ear, vagina or urethra	$5 to 25.00
Dividing the frenum, lingua, or penis	$3 to 5.00
Paracentesis of abdomen	$15 to 25.00
Paracentesis of the thorax	50.00
Operation for tic doloureux	25.00
Do. for hare lip	25.00
Do. for hernia	125.00
Do. fistula in perineo	50.00
Do. fistula in ano	50.00
Do. for phymosis	10.00
Do. fistula lachrymalis	40.00
Do. paraphymosis	10.00
Do. wry neck	50.00
Do. depressing cataract	125.00
Do. extracting do.	150.00
Do. anterior of sandus	25.00
Do. popliteal aneurism	100.00
Do. for carotid do.	200.00
Do. for inguinal or ext. iliac	200.00
Do. brachial	50.00
Do. radial, tibial, or ulnar	25.00
Lithotomy	150.00
Branchatomy	25.00
Trepanning	100.00
Circumcision	10.00
Common case of midwifery	25 to 35.00
Tedious or difficult labors	36 to 60.00
Case of gonorrhoea	15 to 30.00
Do. syphilis	25 to 100.00
Preparing and administering enema	2.00
Visit on board vessel at the wharf	2.50
Do. in the stream	5.00
Do. at Gouman's Island	5.00
Do. for opinion involving a question of law, & in wh. a Phy. may be subpoened	5.00
Extracting tooth at the patient's house	2.00
Do. at the surgeon's	1.00

Pharmaceutical Charges.

A single prescription furnished	0.50
Pills per dozen	0.75
Boluses each	0.50
Electuaries per ounce	1.00
Infusions per pound	2.00
Solutions per pound	1.50
Tinctures per ounce	0.50
Ointments & cerates per ounce	0.50
Decoctions per pound	0.50 to 2.50
Blistering plaster according to size	1.50 to 2.00
Other plasters	0.50 to 2.50
A single medicine dispensed without visit	1.00
An anodyne draught	0.50

Archelaus Green Smith, M.D.
New York City

From the diary of my great-grandmother, Melania Smith, and from other family sources, I have been able to picture what manner of man Dr. Smith was, and what manner of life he lived:

Born in Otego, N. Y., in 1792, he lived the rough rural life of the time. After toiling all day as a farm boy in the field, and acting as postmaster's assistant through the evening, he pored over medical books by flaring candle light, interrupted by the necessity of delivering letters to frequent applicants. He was an athlete, standing six feet tall in his stockings, and could walk under a clothesline with his shoes on and turn around and jump over it.

He served as an army surgeon in the War of 1812, and then took up the practice of medicine in Western New York. It is said that because of his many operations he was called "Butcher Smith," and all the countryside knew him in winter by the silvery tone of his sleigh bells, and would announce "there goes Dr. Smith" when he went by at night.

As his success grew he decided to move to New York City. Having at the first stages of his career commanded in his profession, all the business he could attend to, first in a sparsely populated country place, then in villages each larger than the one last left, and finally in a growing city of Western New York, he sought the metropolis with a spirit undoubting and undaunted as to perfect success. The first year promised the ultimate fulfilment of his expectations. His reputation as a medical man was good in this city; but it never equalled the celebrity which, both as a physician and surgeon, he acquired in Western New York. He was the

first man in that section to apply the modern methods in the treatment of typhoid, in which he was remarkably successful.

He was keenly interested in his cases and never lost an opportunity to improve his knowledge through post-mortem examination. One of his patients "in spite of all he could do, wasted away and finally died." He was determined to learn the cause of death, but an autopsy was refused, so after the funeral he went at night to the cemetery and brought the body back to his barn, where he made the examination and then prepared and mounted the skeleton, which was thereafter kept in a closet off his study. Years later this skeleton was accidentally recognized by a suspicious relative who based the identification on the fillings of the teeth. Dr. Smith was brought to trial. When it was proved that the grave had in truth been robbed, he was so fearful of conviction that he had horses stationed every five miles in order to make an escape over the Canadian border. But the lawyers succeeded in discrediting the witness who identified the skeleton—he became confused and said the tell-tale fillings were on the right instead of the left side of the jaws. Thus Dr. Smith was acquitted and did not have to make use of his plans of escape.

Book Reviews

Annals of Roentgenology, a Series of Monographic Atlases, Edited by JAMES T. CASE, M.D., Ex-President of the American Roentgen Ray Society. Volume III. *Digestive Disturbances in Infants and Children, Roentgenologically Considered.* By CHARLES GILMORE KERLEY, M.D., and LEON THEODORE LEWALD, M.D. Paul B. Hoeber, 67-69 East Fifty-Ninth Street, New York. 1923.

This third volume of the *Annals of Roentgenology* is an exceedingly well-gotten-up atlas of the roentgenologic findings in the more important of the digestive diseases of children, in which roentgenology is of value. The plates are for the most part good and clearly illustrate the conditions described.

William A. Downes, M.D., Clinical Professor of Surgery at Columbia University, has contributed a short foreword on the surgery of infants. The value of the x-ray in the differential diagnosis of lesions and congenital anomalies of the intestinal tract and of abdominal tumors is stressed.

The volume is divided into two sections, the first containing a discussion of the various important conditions of the esophagus, stomach and intestinal tract, the diaphragm and the abdominal cavity. The proper technique of x-raying the gastro-intestinal tract in infants is also described. The second section is composed entirely of excellent plates, illustrating the various conditions met, with short descriptive texts in English, French and Spanish.

The roentgenologist will find much of interest in this book and the pediatrician should find it of distinct value in adding to his understanding of that most useful adjunct to diagnosis—the x-ray.

The Practical Medicine Series. Under the general editorial charge of CHARLES L. MIX, A.M., M.D. Volume I. General Medicine. Edited by GEORGE H. WEAVER, M.D., LAWRASON BROWN, M.D., ROBERT B. PREBLE, M.D., BERTRAM W. SIPPY, M.D., and RALPH C. BROWN, B.S., M.D. Series 1923. Chicago: The Year Book Publishers.

This volume covers for another year publications on the subjects under the head of internal medicine. It serves the purpose of enabling the reader to make a rapid survey of such of the recent literature as has been selected by its editors as in their opinion deserving consideration. It consists of a large number of abstracts of articles, some followed by editorial comment. As is almost necessarily the case with abstracts, one feels that much of the character of the originals has been lost in the abstracting, so that one reads with frequent feeling of uncertainty as to how much importance to attach to certain reports. Also it is difficult for the mind to digest fully such a condensed and varied form of mental diet as rapidly as it can be read. In the present volume, however, the quality of the abstracting seems to the reviewer to have improved as compared with the volume of last year, and the occasional comments of the editors add much. The typographical errors that were noticeably prevalent in last year's volume are less in evidence in this one. Thus the volume may be set down as a creditable one of its kind. While the study of such works alone is not a good substitute for general reading, few who read this book will fail to find in it matters of importance that would otherwise have been missed.

Physical Diagnosis. By RICHARD C. CABOT, M.D. Eighth edition. Revised and enlarged, with six plates and 279 figures in the text. New York: William Wood and Company, 1923.

This volume deserves widespread use, particularly by beginners in the study of its subject, from its conspicuous qualities of clearness, vividness and simplicity of description. It covers in the comparatively compact space of its 536 pages the whole scope of physical and of laboratory diagnosis as commonly practiced by the internist, with sufficient references to electrocardiography, x-ray evidence and other special examinations. It reflects throughout the au-

thor's own observations and experience, his analyses of these and his practical deductions from them. It devotes itself, therefore, mainly to description of signs and methods that the author himself has found to be of practical value, and in the laboratory sections the tests are restricted to those which it is practicable for the physician himself to perform. Thus the student will learn from this book an eminently practical and "workable" system of diagnosis, sufficient for all ordinary purposes, and to be added to only by the refinements that will come with experience, advanced study and special contact with laboratories. Teachers of medicine also will do well to study this book for the many suggestions that they will obtain as to how its subject may be taught. It succeeds in making many matters seem plain and simple that have too often been made complicated and obscure. As one instance, may be mentioned the manner of analyzing and illustrating the respiratory sounds and their pathological variations, which is elsewhere unequaled. Advanced students will undoubtedly benefit by consultation also of other works, and may find reason in some details to modify their acceptance of certain teachings. But as a starting point for their development this book can be recommended highly.

Practical Dietetics with Reference to Diet in Health and Disease. By ALIDA FRANCES PATTEE. Mount Vernon, New York: A. F. Pattee. 1923. Pp. 687. Fourteenth edition.

Attractively dressed in fabric of the uniform of the trained nurse, to whom this volume is dedicated, the fourteenth edition of this recognized reference work on dietetics appears in a revised form made possible by the collaboration not only of "four professors of leading schools of Household Arts," but of "leading members of the medical profession," special emphasis having been placed upon "the source and value of the vitamines and the grouping of diseases which are best treated by means of high calory, salt-free, and other diets."

Accompanying the text-book is a 142-page pamphlet in paper covers, entitled "Teacher's Dietetic Guide," prepared "in response to many requests from superintendents of Training Schools and Dietitians," which contains the "Dietetic Standard Curriculum for Schools of Nursing," and other outlines which will doubtless prove of value and convenience, no less to the teacher than to the nurse who is preparing for the state examinations.

The volume itself seems almost to have outgrown its title of "Practical Dietetics." There is at least much in this comprehensive volume of over 600 pages, which the hard-working nurse should not be expected to remember. For example, it is not often that the nurse will or should be called upon to remember the salt content of "Roborat," or "Sanatogen." Yet the nurse is fortunate in having available a volume to which she may turn with full assurance that within its covers she will find not only this but much other information concerning which she may have curiosity, though the responsibility for its application should rest not with her but with the physician.

As a compendium of information concerning diet and its utilization by the patient, the present volume is of definite value, no less to the trained nurse to whom it is dedicated, than to teachers of training schools for nurses, and to all physicians interested in the vital problem of better dietary care of the sick.

Colloidal State and Its Medical and Physiological Aspects. By SIR WILLIAM BAYLISS. Oxford Medical Publications. London: Henry Frowde and Hodder & Stoughton. Pp. 95. Price $2.15.

This monograph is an extraordinarily clear and concise presentation of a very large and important branch of science. The subject of colloidal chemistry is intricate in the extreme, and is largely in a state of flux and uncertainty, yet the salient points have been brought within the compass of 92 pages. It would be hard to imagine a greater concentration of information in a few words than is found here. With a bold use of striking figures of speech, the author has made somewhat difficult concepts intelligible to readers of only elementary scientific training. It is possibly open to question whether quite such definite crystallization of a science which is still in the making is justified.

At the outset he presents a picture of the nature of the colloidal state. He then discusses the influence of the surface of the colloidal particle, especially with reference to adsorption and the phenomena of surface tension. He deals with dissociation, osmotic pressure, precipitation, viscosity, imbibition, and the Donnan equilibrium. After this follows a valuable discussion of the physiological bearings of the colloidal state, and a concluding chapter on proteins and hemoglobin, in which the important significance of the iso-electric point is brought out.

In this book a judicially impartial attitude has been attempted toward the controversy between Loeb and other colloidal chemists as to the degree in which the properties of proteins can be explained in terms of their dissociation as amphoteric electrolytes, and to what extent the phenomena of adsorption must be invoked to explain their behavior. Some chemists may take issue with some of the views toward which he leans, but the book is certainly of value to everyone interested in any of the fundamental branches of physiology, and many points are elucidated which have a direct bearing on the science of medicine.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY
RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.

F. M. PAINTER, ASSISTANT EDITOR

CASE 9441

A PORTUGESE-AMERICAN druggist of thirty-five entered April 17, 1923, for study.

F. H. Unimportant.

Occupational History. He had been a sailor and had come in contact with people from all over the world, although he had never been away from the New England coast.

P. H. Negative except for constipation for years, accompanied at times by occasional dizziness and visual disturbance with light in front of the eyes and headaches lasting for a week; compound fracture of the right leg nineteen years ago; and an occasional cold.

P. I. Two years ago he slowly developed a generalized eczema. His skin was dry and flaky, with occasional small boils and blisters and considerable itching. It cleared up partially at times. A year ago small firm nodules appeared on the legs from time to time and disappeared. For the first year he was treated with salve. Then he had vigorous treatment with the Alpine lamp for several months until his skin peeled. He seemed to improve a little at first, but later became worse. Then he had intravenous treatment at weekly intervals for three months ending four months ago, and improved considerably. This was followed by one intramuscular injection two months ago. The following week he received an intravenous injection (some form of arsenic). The next day he had a chill. He did not return for more treatment. A week after this, seven weeks ago, he noted some nodules on his right leg. Some disappeared, some persisted and grew larger. Others began to appear on his face, arms and body, so that within three weeks he was pretty well covered. Since then some of the lesions had broken down, including one on the right eyelid, and others had grown quite large and were covered with crusts. There was not much itching. His general health had not changed until a week ago, when he "caught cold." Since then he had been hoarse and had had a great deal of unproductive cough. He had taken Fowler's solution. He brought a negative Public Health Wassermann report dated April 5.

P. E. A poorly nourished man with hoarse voice and dry cough. *Skin* of forehead, lips and cheeks dry and scaling, with some crusting. Below the right ear a rounded doughy nodule in the skin the size of a plum, freely movable on the subcutaneous tissue. Similar growths on the inner end of the right eyebrow and right upper eyelid, the latter ulcerated, presenting a raw seropurulent granulating surface. Many flattened nodules not so well defined infiltrated the skin at the right corner of the mouth (where a fissure ran through it), the chin and neck near the midline and over the center of the left clavicle. The intervening skin of the neck especially presented in places a lichenoid infiltration. The scalp showed crusting and infiltration at the posterior hair border. On the left chest many flat pink scarcely palpable, scaling papules, sharply demarcated, round, oval or irregular in outline, several running together in places, looking not unlike faded psoriatic lesions. The right chest was clear except for one flattened, slightly raised broken-down papular lesion three and a half inches in diameter from which oozed foul-smelling seropurulent secretion. The abdomen showed three small flat oval patches. Just below the umbilicus were several irregular soft projections in the skin, which became more prominent when the patient stood. The back was much more extensively involved than the front, showing many dark-colored, almost macular, confluent patches, others pink, raised and well defined. Three had ulcerated areas. The skin on top looked macerated. Arms markedly involved, swollen. Forearms practically covered with pink tumor masses of various sizes up to three inches in diameter. Hands involved, extensor surfaces more than flexors, although there was a large ulcerated mass on the flexor surface of the left forearm, and one on the right upper arm. Right hand deformed by the nodules. Right leg extensively involved in front. Left leg showed the process in its most malignant form. On the back of the thigh was an area six inches in diameter, deeply excavated, with firm thick raised somewhat undermined edges and a black necrotic base with much pus. Below the knee was a similar smaller area. Teeth, many missing and broken, leaving black stumps. Marked pyorrhea, with much foul smelling detritus. Throat, chronically inflamed tonsillar pits and fauces. A few discrete pea-to-hazel-nut-sized cervical and supraclavicular glands. One hazel-nut-sized right submaxillary gland. Groups of six to seven round and oval discrete firm elastic glands in the axilla from the size of a pea to an inch in diameter, not adherent. Three to four glands in each groin ½ to ¾ of an inch in diameter. Chest hyperresonant.

Lungs negative except for a few bronchial râles. *Heart.* Impossible to percuss borders. Apex impulse not found. A rough systolic murmur at the base. Pulses and arteries normal. *Abdominal wall* infiltrated. Considerable rigidity. Palpation not satisfactory. *Extremities.* Right leg slightly atrophied, bent. Foot deformed (equinus). *Pupils* and *reflexes* normal.

T. 97.1°-102.8° with daily evening rise. *P.* 95-132. *R.* 22-32, with a terminal rise to 42. *Urine* 3 17-97. Sp. gr. 1.010-1.025. Cloudy at five of seven examinations, the slightest possible trace of albumin at five, a few leucocytes to loaded with leucocytes at four, rare to many red blood corpuscles at two. *Blood.* April 17, hgb. 80%, leucocytes 30,000, polynuclears 57%, lymphocytes 6%, eosinophils (somewhat large and atypical) 30%, unclassified 7%, platelets slightly diminished, reds normal. At five later examinations leucocytes 33,200-44,200, polynuclears 45%-82%, lymphocytes 3%-6%, eosinophils 18%, 48%, 26%, 19%, 9%, unclassified 3%-7%, red count normal, slight achromia twice, platelets increased once, slightly diminished once, normal once. *Bleeding time* three minutes. Nasal smear negative for lepra bacilli. *X-ray* of heart and lungs normal.

The dry lesions were treated with salicylic acid ointment*, the ulcerations with Dakin's solution. After x-ray treatment the lesions on the right arm flattened definitely and some almost disappeared. The throat was better. Further x-ray treatment was given to the right leg, the face and the right arm. After treatment a nodule on the right wrist broke down and discharged foul smelling material. May 9 and 10 sodium cacodylate gr. ss was given s.c. once i.d., May 11-17 twice i.d. It was discontinued because of the appearance of red blood cells in the urine. May 18 the patient complained of sharp pain in the left ankle at times. The ulcerated areas stopped sharply at the muscle layer, so that large areas of muscle were exposed. Much pus could be squeezed out of the ulcers on the right leg. An area beneath the left jaw also suppurated. He looked remarkably well considering the enormous amount of pus formation in the various lesions. He slowly but steadily went downhill, however. May 27 Fowler's solution was given, three minims t.i.d., increased by one minim daily. June 1 there were large moist and bronchial râles in the chest. The left chest was dull posteriorly. The pulse was very poor in quality. That day he died.

*Salicylic acid, gr. x; bismuth subnitrate, 1 oz.; amyl, 2 ozs.; oil of rosewater, 1 oz.

Discussion

BY DR. RICHARD C. CABOT

NOTES ON THE HISTORY

"For study" means that they did not know what the diagnosis was when they sent the patient in, or did not want to commit themselves. We have to send a patient into this hospital for something, but when we do not want to commit ourselves we send him in "for study," which does not involve one in any embarrassment whatever.

The most definite disease hazard we think of when we think of a sailor is syphilis.

A part of his past history sounds like migraine, which is so often accompanied by those disturbances of light in front of the eyes.

We start the present illness without any special clues obtained from the past history as to what he is going to suffer now.

Dr. Oliver, is it common for a generalized eczema to show itself for the first time as late in life as this?

Dr. E. L. Oliver: I should not say it was very uncommon.

Dr. Cabot: But it is commoner to show a tendency of the system to that sort of thing by something in childhood or youth. You would be a little surprised, though not much, if a man came with the first appearance of eczema at thirty-three.

Dr. Oliver: Yes. The diagnosis of eczema at times is pretty difficult to make. Perhaps it was wrong here.

Dr. Cabot: But if we could not call it anything else than that we might have to say "eczema," I suppose. This being a dermatological case up to this point I am going to ask Dr. Oliver to help me. Is there any intravenous treatment that will help eczema?

Dr. Oliver: Sometimes arsenic will.

Dr. Cabot: So that treatment does not prove that he did not have eczema?

Dr. Oliver: No. Especially in the dry scaly cases it does sometimes help.

Dr. Cabot: What are the chances of his getting arsenic intramuscularly?

Dr. Oliver: It is more likely to have been mercury in some form.

Dr. Cabot: That is what I thought. It seems as if he were being treated for syphilis now rather than for eczema. As to chills following arsenic preparations, don't they usually come sooner than the next day?

Dr. Oliver: Yes; we expect them in five or six hours. But if he had arsenic late in the afternoon he might go to sleep and wake up with a chill the next morning.

Dr. Cabot: There has been some question of nodules before, also. Is it true, as I should suppose, that this last act cannot be called eczema?

Dr. Oliver: I don't see how it can be.

Dr. Cabot: He has certainly got something else than eczema now.

The "cold" is put in quotation marks because we all know how many diseases are mistakenly covered up by such a term as that.

Let us sum up what we have to say about this

from the present illness before physical examination. We have to say that he had a long, itching, scaling disease, which, because it itched so much, probably was not syphilis at the beginning.

DR. OLIVER: No. Itching in syphilis is very rare.

DR. CABOT: Then he had something which in all probability was treated for syphilis, which was characterized by nodules breaking out in all parts of the body, and which we certainly suspect of being syphilis. At the end he has a cold, cough, and hoarseness. I do not think we can argue much from that,—possibly some little respiratory infection of the type we call a cold. The only fundamental things we have are these skin lesions, the skin lesions very probably of syphilis.

NOTES ON THE PHYSICAL EXAMINATION

Anybody having syphilis who develops hoarseness, especially if it is a long-standing hoarseness, always makes us think of aneurism, because aneurism is a result we are always fearing in syphilis.

The distribution of the lesions is mostly on the head, some on the chest, very few, only three, on the abdomen.

I do not see how they can tell that his throat is "chronically inflamed" by the appearance.

We certainly have glands in the axillae and groins as well as in the neck, though I do not know that we need anything more than these widely distributed lesions to account for them.

There is nothing particularly significant about the heart.

The foot deformity accounts for the right leg's being bent, I suppose.

One of the things I have been looking for is the spleen. When a patient has general glandular enlargement which may or may not be due to superficial lesions we want to know whether the spleen takes part or not. No evidence here.

He had a pyrexia a good part of the time.

From the urine I do not see any reason to suppose a nephritis. We can have all these from various affections of the genito-urinary tract.

In the report of the blood examination the polynuclears are only fifty-seven per cent., an unusual state of things with leucocytosis, and the eosinophils are high in all counts.

Is the negative nasal smear enough to exclude leprosy, Dr. Oliver?

DR. OLIVER: We often find the bacilli in nasal smears, perhaps in fifty per cent.

DR. CABOT: Is there much in this case to suggest leprosy so far?

DR. OLIVER: No. I think it should, so far as possible, be ruled out, but there is not much to suggest it here.

DR. CABOT: This does not attack the fingers or the face in the way that leprosy usually does.

DR. OLIVER: No.

DR. CABOT: Many of the nodules in other places not treated by x-ray broke down and discharged, so there is no reason for blaming the x-ray.

Sodium cacodylate is a form of arsenic which many doctors like. The red blood cells in the urine may have had something to do with the use of arsenic, though I do not see how we can be sure.

DIFFERENTIAL DIAGNOSIS

I am incompetent to make any proper differential diagnosis on this case, but for my own good I will say the little I know first, and then ask Dr. Oliver to discuss it.

In the first place, syphilis of course is in our minds. It was in the minds of those who treated him. Can it have been syphilis from start to finish, and nothing else? I never knew a case of syphilis to die so quickly with skin lesions alone and no evidence more than this patient has of internal lesions.

If it was not syphilis, what else could it have been? Well, it might have been some form of ulcerating neoplasm. He had lesions in his glands in various places. We do not know about his spleen. We have nothing to suggest any foci in his internal organs. His blood is perfectly consistent with a lymphoma with skin lesions, malignant lymphoma, which we often call Hodgkin's disease. I do not see any way in which that can be excluded. I think it would be my diagnosis if I had no one to advise me.

The excess of eosinophils has been a feature throughout. Eosinophilia is one of the most picturesque and mysterious pictures in the whole of medicine. It occurs in five great groups of cases: (1) In the first place, after any infectious disease. During infectious disease eosinophils usually disappear from the blood and then appear in increased numbers afterwards. So that we have been in the habit of saying that they have something to do with immunity. (2) Then it is very common in animal parasitic disease, either in the intestines or elsewhere, the commonest being trichinosis, then hookworm, and including the hydatid of Australia and other countries. (3) Then the great group of chronic skin diseases in which it used to be thought of some diagnostic value because it seemed to appear in certain ones, but in which I think it has very little value because we know it appears in so many. (4) Then it is common in neoplasm, especially in the particular type of neoplasm we call leukemia, which is neoplasm with circulating metastases. And finally (5) it has a mysterious way of appearing in enormous degree in bronchial asthma.

Those whose minds run to theory like to try

to bring all these things together and describe some x behind them all, but I do not think successfully. In this case it may be a feature of Hodgkin's or malignant lymphoma with skin infiltrations, or the consequence of some other chronic skin disease which I do not know enough to recognize. Being a sailor he may have got all sorts of rare skin diseases which we do not see in this part of the world, which I do not know anything about.

Is this a case you took care of in life, Dr. Oliver?

DR. OLIVER: Yes.

DR. CABOT: Then will you take us at this point?

DR. OLIVER: The story in this case and the patient's appearance make the dermatologist think of one disease and of almost no other,—that is granuloma fungoides, which is one of the most horrible diseases or perhaps the most horrible to see and take care of that I know. This disease is pretty well mixed up in some cases with Hodgkin's and what we call leukemia of the skin, of which we had some examples at the same time in Ward G. In those cases the medical men said—although the lymphocytes were in some of the cases I think in the hundreds of millions, a very large percentage of lymphocytes—the medical men said that the cases were entirely different from the lymphoid leukemia that they see. But we recognize it as a definite skin disease. Some of the leukemias of the skin which we see have an appearance very much like leprosy. They show the wrinkled, leonine appearance that we associate with leprosy. We saw a case in New York recently which we all thought was probably leprosy, but which turned out to be a leukemia. This case, however, is more typical of granuloma fungoides in that it ulcerated rather early. The course of granuloma fungoides is divided into four periods usually. The first is a period of generalized erythema or perhaps scaly lesions, psoriasiform lesions, usually with a good deal of itching. That may last for five years perhaps before anything else happens, the lesions being perfectly fixed and more or less unchangeable. It may clear up and return. The second stage is one of infiltration of the skin either in patches or generalized. The third stage is that of tumor formation, with nodular tumors varying from the size of a pea to that of an orange. The fourth is the terminal stage, when the tumors become ulcerated. The course of the disease is very variable. It may last from five to ten years or it may run a very rapid course. I have seen one case that died I think within four months of the appearance of the first lesion of the skin. The first lesion, in fact, was a tumor which broke down rapidly; others appeared, and he was covered with these ulcerating tumors inside of a month or two, and died in four months. That is certainly unusual.

The cases that last longest have occurred since x-ray has been used, because x-ray is of very definite value. It heals the ulcers entirely in some cases, and the patient may stay well for a number of years without further treatment, or he may have to have treatment to keep the tumors in check. Some patients who were expected to die within two or three years have lived eight years or more under constant treatment. Unfortunately most of the cases we have had here have come to us so late in the ulcerating stage that x-ray has not been of great use.

This is a typical case, and the only other diseases to consider I think are leukemia of the skin, Hodgkin's disease, and multiple sarcoma. In the case I spoke of as being so rapid Dr. Mallory examined a specimen and said it was typical small round-cell sarcoma. But the lesion he examined and every lesion healed absolutely under x-ray without a trace except a scar where they had been, and other lesions broke out. That is not the history of sarcoma. Granuloma fungoides is a malignant disease of the skin without doubt. It acts like cancer and it is always fatal. No permanent recoveries are on record.

Many of these cases show towards the very end an increase of lymphocytes in the blood. The eosinophilia, as Dr. Cabot said, is so common in so many skin diseases that I do not think it counts for very much. This patient did not at any time show any great increase of lymphocytes, as I remember it. That is the only way we can differentiate between granuloma fungoides and leukemia of the skin; but the course in this case is more in keeping with what we associate with granuloma fungoides. I should not suppose the glands were anything more than we should expect in any chronic itching skin disease where there is scratching all the time,—simply hyperplasia.

DR. CABOT: That is a point of great importance, I think, and we shall probably be able to verify it post mortem.

DR. OLIVER: I have no idea what the post-mortem was. Most of these cases who have died here and been necropsied have shown practically nothing except the skin lesions and hyperplasia of the glands.

This was a horrible case. These lesions went down to the muscle, and the odor was frightful. The man was extremely cheerful and seemed to feel pretty well as a matter of fact, but he simply rotted to death.

A PHYSICIAN: May I ask how you ruled out sarcoma?

DR. OLIVER: I think the multiplicity of the lesions and the rapid ulceration are very much against that; also the previous skin trouble. Sarcoma usually does not begin after this long period of chronic skin disease. It appears rather suddenly, out of a clear sky. There is a

multiple sarcoma, sarcomatosis, that may spread all over the body, but its history is usually different.

A PHYSICIAN: Has a causative factor been found?

DR. OLIVER: No. It is considered by many to be an infectious disease, but if it is the infectious element has never been found. It seems to me it is more like cancer. It comes in women and men equally, almost always after the thirty-fifth year, we might say in the cancer period. It is unknown in childhood and in youth. I do not think I have ever seen any case reported under thirty-five. This man was just on the borderline.

DR. CABOT: Years ago I began to be interested—and should have kept on if I had kept more actively in medicine—to reform our medical terminology, and especially in the attempt to get together the terms started by different specialties like dermatology and laryngology each for its own purpose and with the idea that there is such a disease of its locality alone. I think the sort of getting together that we have done a little of here today is very valuable. For instance, if this thing is pathologically the same as Hodgkin's disease, then, it seems to me, to keep up a special name for it, like "granuloma fungoides" merely when it happens to appear on the skin a great deal, is not desirable. I do not know how to settle these questions except by necropsies and consultations at necropsy between a general clinician and a dermatologist. Of course clinicians see cases which everyone would call Hodgkin's disease—long-standing glands in the neck and enlarged spleen—sometimes complicated by itching, by scaling, by cutaneous lesions which break down. Typical leukemia also, as Dr. Oliver has said, may have ulcerating skin lesions. It would be a great thing, therefore, if we could come to a common terminology and say, "There is a special form of cutaneous lymphoma which we have called 'granuloma fungoides,'" or to say that we will not give such names to special localizations of one underlying disease. The microscope, so far as I see, is the only thing that can settle it. The facts of treatment are all in favor of that unification that I am trying for. Among tumors I do not know any that yields more readily and rapidly to x-ray than Hodgkin's. That fact would tend to make us rather unify this case with the other forms of lymphoma than separate it from them.

Dr. Holmes, is there anything to say about the x-ray treatment of the disease which this case exemplifies?

DR. HOLMES: Not much more than Dr. Oliver has said. The tumors of this disease are susceptible to radiation. The same is true of Hodgkin's. As Dr. Oliver has pointed out, we should get them before the tumor has broken down; after that we do not get good results. It does not require a very large dose to affect them successfully. I think it is advisable to keep well under the dose that would give erythema. I think a good many unsuccessful results are brought about by giving too large a dose. We have found recently in the treatment of Hodgkin's disease that we can get satisfactory results by giving about one-eighth of the erythema dose, not over one-tenth of what we give to the carcinomata. Such a dose ought to be absolutely safe locally and also generally. As has already been said, they do respond very rapidly to the treatment.

DR. CABOT: The issue Dr. Richardson is going to be able to decide for us is parallel to the issue that for years made people call tuberculosis on the skin "lupus," in the lungs "consumption," in the bone "hip disease," without recognizing that they were all one thing. If we can unify these different forms of lymphoma it is very desirable.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Mycosis fungoides.
Bronchopneumonia?

DR. RICHARD C. CABOT'S DIAGNOSIS

Malignant lymphomata of the skin.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

Mycosis fungoides (malignant lymphoma of skin.)

2. *Secondary or terminal lesions*

Degeneration of marrow of femur.
Abscesses in the retroperitoneal tissue (left) and in the anterior abdominal wall.
Suppurative pneumonia.
Serofibrinous pleuritis, left.
Acute pericarditis.
Fatty metamorphosis of the liver.
Wet brain.

3. *Historical landmarks*

Slight chronic pleuritis.
Chronic hyperplasia of the spleen.

DR. RICHARDSON: The skin of the face, neck, body, extremities, showed numerous smaller and larger tumors discrete and confluent, and smaller and larger areas of necrosis and ulceration in what was apparently tumor tissue. Some of these areas were very large and extended deeply into the subcutaneous tissues. The skin condition in this case very much resembled that in the previous necropsy, the difference being that

in the other case the spleen, liver, and lymphatic glands were markedly involved. The main lesions here were in the skin, and it is rather a typical picture of malignant lymphoma of the skin, for which the old name is mycosis fungoides.

There was deformity of the right tibia, said to be an old fracture. The left thigh was a little larger than the right. There was no definite edema.

Examination of the head showed a wet pia and wet brain tissue.

The marrow of the femur was fatty and showed here and there a few reddish areas. There was no definite infiltration of this marrow with lymphoid cells. There was some degeneration of the fat tissue of the marrow.

The retroperitoneal glands were slightly to moderately enlarged, but examination of specimens taken from the glands showed no evidence of invasion by lymphoid cells. The axillary glands were slightly enlarged, but we found no cells in them of the same nature as those in the skin.

The left pleural cavity contained 1500 c.c. of thin cloudy fluid and fibrin. There were a few adhesions on the left. The trachea and bronchi contained much muco-pus; that is, there was a purulent bronchitis. The bronchial glands except for being slightly enlarged were negative. The right lung was negative at the apex. Scattered through this lung however were areas of what for want of a better name we call suppurative pneumonia,—pneumonia gone on to suppuration. The left lung had a somewhat similar appearance and in addition to that a large abscess in the retropleural tissues which bulged into the cavity. It was 11 cm. by 3 cm. in diameter and 3 cm. deep, and contained pus.

In the anterior abdominal wall there was another collection of pus. The microscopic examination gave no hint as to whether there was any tumor tissue there or not.

The pericardium contained a little cloudy fluid and fibrin,—a slight acute pericarditis associated with the infection present here. The heart weighed 240 grams and was negative. The circulatory apparatus in general was negative.

The liver was large, 2025 grams, but we were unable to make out any infiltration with lymphoid cells. There was a little fatty metamorphosis. The spleen was slightly enlarged, 360 grams, and at one place in the tissue there seemed to be some evidence of the presence of lymphoid cells, but not very well marked,—in contradistinction to the other case, where there were many.

The kidneys microscopically looked all right, but we found one or two foci of lymphoid cells, suggesting that if he had lived longer there might have been many more. There was a little patch of hemorrhagic edematous mucosa in the bladder.

CASE 9442

A NORWEGIAN housewife of thirty-seven, entered March 29, 1910.

F. H. Her father died at fifty-eight, after being ill many years with chronic cough. She was not at home at the time.

P. H. She had the diseases of childhood, and had always been subject to colds. Last year she had "grippe and influenza."

HABITS. Good.

P. I. Four days before admission, after feeling perfectly well, she felt as though she were going to be ill. Her menstrual period began, but there was scarcely any flowing. The next day she had a very severe headache. She had vomited several times after taking medicine.

During the history taking she was dull, apathetic, wandering, and forgetful. She did not grasp questions. Her answers were irrelevant, and very slow and halting.

P. E. Fairly well nourished. Tongue, dry brown coat. Apex impulse of the *heart* not seen or felt. No enlargement to percussion. Sounds at the apex fair in quality. P_2 greater than A_2. Systolic B.P. 165. *Lungs.* Slight dullness, a few crackles and consonating râles, vocal and tactile fremitus slightly increased at both apices, front and back, with bronchovesicular breathing in front and bronchial breathing in the back; signs more marked posteriorly. *Abdomen.* Slight tenderness in the epigastrium. *Genitals* not recorded. *Extremities.* No edema. *Pupils.* Normal reactions. *Reflexes.* Knee-jerks not obtained. Double Babinski?

T. 100.7°-102°, with slight afternoon rise on three of the five days. *P.* 110-131. *R.* normal. *Urine.* ℥ 30 on the one occasion recorded. Sp. gr. 1.011-1.013. Slightly cloudy at one examination, neutral at one, alkaline at the other, a very slight trace to a trace of albumin at both. *Blood* not recorded. *Spinal fluid.* 2-3 c.c of clear colorless fluid not under increased pressure, not coagulated after fifteen hours. Two hundred leucocytes per cu. mm., 80 per cent. mononuclears, 20 per cent. polynuclears.

The morning after admission the patient was mentally clearer. Fundus examination showed considerable blurring of the edges of both discs with marked tortuosity of the vessels, and in the left eye a hemorrhage in the center of the disc.

The afternoon of April 1 the patient developed a complete left-sided hemiplegia. The white count rose to 13,000. She failed gradually, showing no new signs or symptoms, and died April 2.

Discussion

BY DR. RICHARD C. CABOT

NOTES ON THE HISTORY

Presumably she was not exposed to any tuberculosis her father may have had.

Three days' headache and vomiting is all the history before she comes here. Obviously there is cerebral trouble of some sort, but it does not sound like an acute meningitis, in which ordinarily there would be more clouding of consciousness than is here described.

NOTES ON THE PHYSICAL EXAMINATION

This lung examination should mean tuberculosis. These are the signs of solidification with bronchitis in both apices, and there is practically no other disease that does it.

We wish we could be sure about the Babinski. It would throw some light on the other condition.

The spinal fluid shows chronic meningitis, which with her lungs should spell tuberculous meningitis.

DIFFERENTIAL DIAGNOSIS

Hemiplegia in tuberculous meningitis is not unknown, but is unexpected, unusual. It makes us wonder whether we are right in guessing at that first. On the other hand, with a cerebral tumor, which she might perfectly well have, hemiplegia is not rare at all. Can this thing be a vascular affair, an arteriosclerosis with plugging or rupture of a cerebral vessel? She is young for it. The history does not sound like it, and until the hemiplegia there is nothing to suggest it. If the spinal fluid is accurately recorded she has no right to have such a spinal fluid with that or with anything except a meningitis.

On the whole, in spite of the hemiplegia, I shall stick to the original diagnosis,—tuberculosis of the lungs, tuberculous meningitis, and very probably a general miliary tuberculosis, although we do not get evidence of that ordinarily, the lesions being so small.

A Physician: What would you say about encephalitis?

Dr. Cabot: We certainly did not see it in life. I do not believe it occurred then, because it is such a clear picture. In this case the course is too acute, and during the time she lived she did not have the symptoms we should expect with encephalitis. The spinal fluid would go well enough. The hemiplegia is not what we expect.

A Physician: Her condition at entrance, wandering, unable to answer questions—

Dr. Cabot: That would do perfectly well, although it is not in any way distinctive. I will bet against encephalitis.

A Physician: Is a blood pressure of 165 high?

Dr. Cabot: Not for a cerebral lesion of some sort. She certainly has some cerebral lesion.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Tuberculous meningitis.
Left hemiplegia—cause?

DR. RICHARD C. CABOT'S DIAGNOSIS

Pulmonary tuberculosis.
Tuberculous meningitis.
General miliary tuberculosis?

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesions*

General miliary tuberculosis.
Tuberculous meningitis.

2. *Secondary or terminal lesions*

Otitis media, left.
Small focus of caseous pneumonia, superior lobe of left lung.

3. *Historical landmarks*

Chronic pleuritis, left.

Dr. Richardson: Extending all along the base of the brain and out the fissures of Sylvius was the characteristic exudate of tuberculous meningitis,—that is, the grayish granular exudate, with sometimes in places what are apparently perfectly definite tubercles, as could be seen in this case. The brain was otherwise negative. I found no evidence for hemiplegia, no solitary tubercles, no areas of hemorrhage.

The pleural cavities were free from fluid. The pleura of the right lung showed miliary tubercles scattered over it and throughout the substance of the lung many tubercles. The left lung showed a similar condition, with a small focus of caseous pneumonia in addition. The bronchial glands were enlarged, pigmented, firm, but there was no evidence of any tuberculous lesions. In other words, the tuberculosis in this case, so far as the necropsy went, was present only in the lungs, the pleurae, and the meninges.

The circulatory apparatus in general was out of the picture. The liver showed a few tubercles here and there and one yellowish nodule. The spleen showed miliary tubercles. Nothing was found in the kidney except a few scattered tubercles in the tissue.

In the head there was otitis media on the left

side. Examination of the pus showed leucocytes and micrococci but no tubercle bacilli. I do not remember ever having seen them in the pus in the middle ear except once. This is a typical case except that it is rather unusual not to find any tuberculous lesions in the glands examined.

CASE 9443

An American schoolboy of thirteen entered May 23, 1923, complaining of pain in the right abdomen, intermittent for three days, constant for two hours.

F. H. His father had been sick with a cough all his life and had to stop work from time to time for three weeks or so.

P. H. He had had mumps, pertussis, and pleurisy, for which he was strapped, last winter. For the past winter he had had occasional fleeting shooting pain in the epigastrium on running.

P. I. May 20, after feeling "sick at his stomach" for an hour, he had sharp, colieky, crampy pain in the epigastrium, which lasted two hours. The nausea persisted throughout the night without vomiting or defecation. The next morning he felt well and went to see a doctor. He remained without symptoms until May 22, when about noon the nausea returned. He had a watery movement. After three hours of nausea he came to Boston to see a doctor, and again felt well until the following morning, when the nausea returned and he vomited material possibly streaked with blood, relieving the nausea. Since morning his throat had been sore. He ate dinner and had a loose bowel movement. Late in the afternoon he had an attack of sudden intermittent cramp-like pain in the epigastrium, shifting at the end of half an hour into the right lower quadrant. The pain persisted until just before he arrived at the hospital at half past eight.

P. E. A well-built, well-nourished, sick-looking boy with flushed skin. Throat and tonsils injected. Cervical glands enlarged. *Heart, lungs, abdomen, genitals, extremities, pupils,* and *reflexes* normal. *Rectal examination.* Tenderness high up on both sides equally.

Before operation *T.* 100.2°, *P.*, *R.*, and *urine* not recorded, *leucocytes* 30,000.

Operation was done the day after admission. The patient made a good recovery from anesthesia and seemed to feel better the following morning. May 26, however, he was not so well. The temperature and pulse had risen to 103.4° and 140 respectively, the respirations to 40. A medical consultant excluded the respiratory tract and the heart. The abdomen was tense, the wound apparently not infected. Rectal examination showed tenderness on both sides as before. A stomach wash showed dilatation. That evening the temperature was 105.4°, the pulse not countable. He was given a subpectoral, sips of fluid and morphia. That evening he died.

Discussion

BY DR. EDWARD L. YOUNG, JR.

If every symptom that we meet in our work could at once call to mind all the possible causes for such a symptom the diagnosis would often be very much easier. In this particular case pain in the right abdomen of course can be any one of a great many things. In a boy of thirteen, where it is of acute onset, as this is, we of course think of appendicitis first. When we find in the family history that he has a father who may be afflicted with chronic phthisis we think that the boy is the age when tabes mesenterica is frequently seen. When we find from his past history that he had what was called a pleurisy that diagnosis certainly ought to intrude itself, with further thought of tuberculosis.

The story of the present illness covers three days. I do not think we ought to put much weight on the occasional shooting pains in the epigastrium which had appeared for the past year on running. Almost always the appendix pain which comes on following exertion and is merely a mild appendicular colic is in the right lower quadrant only. The symptoms as described might well be due to an acute appendicitis. The vomiting of material possibly streaked with blood and the sore throat can be and often are the result of vomiting. The thing that is most conclusive is the fact that this severe pain started in the epigastrium and then shifted to the right lower quadrant. That is always extremely suggestive of acute appendicitis.

The examination does not help us very much except that the enlarged cervical glands again suggest tuberculosis. The temperature and leucocytosis are consistent with acute appendicitis In spite of the lack of record I am sure that the urine was done and was negative, as it is a routine to do it. Likewise of course the abdominal examination was done, and it would of course help us to know what it was, but a faulty record leaves us to do the best we can without it.

It seems to me on the story we have it is acute appendicitis and should be operated on at once. Of course something in the examination which has not been put down may have justified delay. I do not think we are justified in saying anything other than acute appendicitis. Whether

or not it is perforated I think we are unable to say because of the lack of record of the abdominal examination, but at this length of time I should think it well may be perforated. Nevertheless with a temperature of only 100.2° abscess formation if present should be well localized.

Is it possible that any condition above the diaphragm is responsible for this picture? It is true that a pneumonia can simulate an abdominal condition, but it is very rare that it should give such a definite picture as this, and it seems to me here we can rule it out even without knowing what the abdomen showed. I think we have got to say acute appendicitis on the chance, and operation was the only treatment.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Acute appendicitis.

PRE-OPERATIVE DIAGNOSIS

Acute appendicitis with abscess.

OPERATION

Local novocain; gas-oxygen. Lower rectus muscle-splitting incision. The peritoneum was opened with the escape of a few drops of pale fluid. The appendix was found in the pelvis, very long, quite injected, but not thickened. No inflammatory membrane or lesion was found. The appendix was delivered in the wound and removed, the stump inverted. Further exploration of the pelvis and lower abdomen revealed no adhesions or pathology. The upper abdominal region was not explored.

PATHOLOGICAL REPORT

An appendix 11.5 cm. long. Its surface is covered with a vascular membrane. Its walls are not thickened. The mucosa is pale.

Chronic appendicitis.

H. F. HARTWELL.

FURTHER DISCUSSION

The surgeon who saw him apparently argued much as we have, but judging from what was found delay in operation may be explained on the lack of spasm and tenderness in the abdomen. Nothing was found to account for the temperature and leucocytosis. That throws us back to the question of pathology above the diaphragm. A medical consultant apparently believed there was nothing there. This opinion would seem to be borne out by the length of time after the onset of symptoms.

At his age peptic ulcer the perforation of which might have caused this picture would likewise seem to be unusual inasmuch as the presence of symptoms in the right lower quadrant would mean the presence of intestinal contents washing down to that point, which was not apparently the case. However, I do not think we can entirely rule that out. I assume that Meckel's diverticulum was absent, as that is one of the things necessary to look for at this age. The mesenteric glands almost certainly would have been recognized, so I think those also must be out of the picture.

Is it possible that the original condition was in fact explained by the appendix, and that the trauma of operation is now resulting in a thymus death? The picture as given here is not what we see in that condition. This seems like an acute spreading infection. It seems to me we have got to lay it to the original condition, because a peritonitis caused by faulty technique at operation would almost certainly not have gone so rapidly, and a peritonitis is apparently present. It seems to me that the only way of making a diagnosis is to ask Dr. Richardson what really was found. My diagnoses now are pure guesswork. I think I should put perforated ulcer first, and peritonitis of unknown origin next.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Subacute appendicitis.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Peritonitis from perforated peptic ulcer? or of unknown origin?

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

(Chronic appendicitis.)

2. *Secondary or terminal lesions*

General fibrinopurulent peritonitis.
Status lymphaticus.
Appendectomy.
Edema of the lungs.
Soft spleen.

3. *Historical landmarks*

Chronic tuberculosis of the mesenteric glands.
Slight chronic peritonitis.

DR. RICHARDSON: Much brownish-red, opaque fluid material flowed from the mouth.

The peritoneal cavity contained a moderate amount of purulent fluid material. The peritoneum generally was coated with a thin layer of fibrinopurulent exudate. This weakly bound the coils of the intestines together. In scattered places there were small pockets of pus. Two of

these were in the region of the pelvis, one on each side. The appendix was wanting. The stump was securely ligatured and water tight.

The small intestine was slightly distended and its walls intact. The mucosa was negative, except for considerable hyperplasia of the solitary and agminated follicles. The large intestine was negative except for hyperplasia of its follicles.

The mesenteric glands were enlarged up to two cm., and at least half a dozen of them showed much fibrocalcareous degeneration. In the region of these glands there were a few old adhesions which extended to the small intestine. These apparently produced no definite constriction. The retroperitoneal glands showed some enlargement, but otherwise were negative.

The thymus gland weighed 30 grams,—considerably enlarged. It measured over all 9 cm. by 4 cm. by 1½ cm. The tissue generally was pinkish gray-red and meaty.

Anatomically this case is one of general fibrinopurulent peritonitis associated with appendectomy. In the background is the condition known as status lymphaticus. There was chronic tuberculosis of several of the mesenteric glands with slight chronic peritonitis.

DR. YOUNG: No wonder we did not guess one condition accurately, because he had all of the conditions which we have discussed. His death was due to peritonitis plus status lymphaticus, and he did have the infected mesenteric glands which were discussed, although they presumably had nothing to do with the present picture. I think the confusion is justifiable in that the status lymphaticus death is not like this, and the average peritonitis death not so quick; but the combination apparently was very vicious.

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SURGICAL TREATMENT OF UNILATERAL PULMONARY TUBERCULOSIS

ARCHIBALD, EDWARD (*Annals of Surgery*, June, 1923), discusses the surgical treatment of this condition briefly and reports the results from 15 personally operated cases with a mortality of three cases. He appends a note saying that he has since publication of this article operated on sixteen other patients with but one death. He believes that the surgical treatment of this condition is promising in well-selected cases. This article reviews a purely personal experience. [E. H. R.]

CANCER OF THE RECTUM AND SIGMOID IN CHILDHOOD AND ADOLESCENCE

PHIFER, C. H. (*Annals of Surgery*, June, 1923), finds that these conditions are, contrary to general knowledge, rather common in the very young. He reports the finding of 49 cases of cancer of the rectum or sigmoid in children under 20 years old; one case at one year, no cases from one to five years, one case from six to ten years, twenty-two cases from eleven to fifteen years, and twenty-five cases from sixteen to twenty years. In children there is a marked predilection for the sigmoid. One is struck by the rapidity of the development of the disease in the young. The symptoms are generally obscure and diagnosis is made before operation rarely. Possibly this is so because in the young the idea of cancer is excluded. Metastases are rare. The treatment is surgical if discovered early enough. The mortality is over 50%. [E. H. R.]

THE AFTER-EFFECTS OF PROLONGED FASTING ON THE BASAL METABOLIC RATE

KUNDE, M. M. (*Jour. Metabolic Research*, vol. 3, p. 399, March, 1923), devised a muzzle and method by which gas exchange of dogs can be determined. . . . Studied three dogs and two humans. . . . Found daily variations in the basal metabolic rate. . . . Pulse rate not always parallel to basal metabolic rate, and therefore not a reliable index. . . . During initial days of fasting the basal metabolic rate in man may be much higher than normal. A fast of 41 days in dogs and 15 days in man caused no appreciable lowering of the rate during the fast. . . . Dogs fasted until body weight reduced 40 per cent., then not only regained the loss, but gained further weight on the same diet which before fasting had merely maintained their weight constant, or they maintained normal weight on a lower calory intake; this indicates a more economical use of the food. . . . After prolonged fasting there is a temporary increase in the basal metabolic rate. . . . During the first four days of menstruation the rate is slightly subnormal. . . . There seem to be seasonal variations in the basal metabolic rate of man. [H. G.]

SACCHARIN

CARLSON, ELDRIDGE, MARTIN, AND FORAN (*Jour. Metabolic Research*, vol. 3, p. 451, March, 1923), say if saccharine is permitted generally it will be ingested by old and young, for generations. There is no evidence that prolonged use would be harmless. It would seem wise to prohibit saccharin in foods and drinks, except as ordered in diabetes. Even then it should be avoided in the presence of duodenal ulcer or in certain neuroses with gastric complications. [H. G.]

DIABETES INSIPIDUS

ALLEN AND SHERRILL (*Jour. Metabolic Research*, vol. 3, p. 479, March, 1923) state that pituitrin s.c. or by nasal spray, reduces thirst and polyuria. . . . Restriction of protein and salt were valuable in the treatment of their four cases; both are not difficult to apply with proper culinary art, and the effort is well worth while. . . . Diet is only palliative but is the most important practical treatment for the great majority of cases. [H. G.]

A Series of Cases of Purpura Hemorrhagica and Aplastic Anemia Due to Chronic Benzol Poisoning in a Canning Plant

Anderson, H. B., Boyd, Julian S., and Jackson, A. B. (*Canad. M. A. J.*, Vol. 13, No. 6, June, 1923) report three cases of chronic benzol poisoning. Benzene, toluene and xylene are all light distillates of petroleum, and act directly on the central nervous, the circulatory, respiratory and hemopoietic systems, and especially on the bone marrow. They also cause capillary hemorrhages, due either to solution of the endothelial cells or to fat embolism with rupture of the capillaries; fatty changes in the kidney and liver may result, and hemorrhages from the gums, nose, throat, stomach, into the lungs, mucous membranes, skin, serous membranes, etc. There is lessened resistance to bacterial infection. Lesions may be reproduced in animals by inhalation of the fumes in a closed chamber. Excitement and delirium may be early symptoms. At times it is the rescuer who loses his life (an evidence of individual susceptibility), and young girls are especially liable to the effects of the poison.

In the explosives industry in the United States in 1916-17 there were fourteen instances of poisoning from benzol or its derivatives. Usually industrial benzol poisoning pursues a slower course and presents the typical picture of purpura hemorrhagica and aplastic anemia.

The authors' three cases of chronic benzol poisoning occurred in close sequence in a plant manufacturing sanitary tin cans, in which was used, as a medium for packing or sealing the joints between the bottom and ends of the cans, a solution of gum rubber, beeswax, and an inert coloring matter dissolved in benzol, known to the employees as "dope."

They showed bleeding of the mucous membrane, purpura, high temperature, hemoglobin from 40-60 per cent., erythrocytes not much over two million, a low white count, the coagulation time markedly lengthened. In two cases the blood corpuscles entirely settled from the plasma before clotting occurred.

Since the appearance of these cases various steps towards prevention of further trouble have been taken. Heavy suction has been installed both below and above the machines. Every employee in the department is given a pint of milk about nine o'clock each morning, and its consumption is insisted on. Approximately every six weeks red and white blood-cell counts and hemoglobin estimations are made on every person coming in contact with the benzol. Any individuals who are not up to a reasonable standard are promptly removed to another department.

[A. W. C.]

Methylene Chloride in Anesthesia

Bourne, W., and Stehle, R. L. (*Canad. M. A. J.*, Vol. 13, No. 6, June, 1923), after animal experimentation used this anesthetic in some patients. In the human a stage of anesthesia not seen with other agents occurs, that is, between the so-called first and second stages a period ushered in by analgesia occurs, which is characterized by anesthesia without loss of muscular power. This stage is followed by one of severe excitement if the administration is continued. The limits of clinical application are therefore restricted to those effects which occur prior to the violent muscular activity. The desired stage can be attained by administering methylene chloride to a point at which consciousness is lost. Administration of the drug is then discontinued, but on the first sign of return of consciousness is renewed, so that by a process of intermittent administrations the pain of many procedures may be alleviated. They recommend its use for the relief of the pains of labor in which the contractions of the uterus do not seem to be impaired, for the induction of anesthesia prior to the use of less agreeable anesthetic agents, in all outdoor minor surgical procedures, for painful dressings, and particularly in dentistry for the extraction of teeth and the preparation of painful cavities.

[A. W. C.]

Xanthoma and Hypercholesterinemia

Mook, William H., and Weiss, S. R. (*Arch. Derm. and Syph.*, Vol. 8, No. 1, July, 1923), report their studies of five cases of xanthoma; they found that the cholesterin content of the blood was markedly increased in a case of xanthoma diabeticorum and in two cases of xanthoma tuberosum, also that the cholesterin content of the blood was slightly increased in a case of xanthoma tuberosum associated with general arteriosclerosis and hypertension and myxedema. Their results confirm the work of Burns. Excluding the palpebral type, they believe that the xanthomas belong to the class of foreign body tumors. They are a cellular (connective tissue) reaction to the deposition of cholesterin bodies from the blood in cases in which a hypocholesterinemia is present. They are localized by motion and trauma.

[A. W. C.]

The Kahn Precipitation in Leprosy

Yale, E. M., and Kolmer, John A. (*Arch. Derm. and Syph.*, Vol. 8, No. 2, August, 1923), examined the serums of 28 lepers by the Kahn precipitation test for syphilis and found them negative with the serums of nonsyphilitic lepers. [A. W. C.]

Studies on the Etiology of Pemphigus

Eberson, F. (*Arch. Derm. and Syph.*, Vol. 8. No. 2, August, 1923) isolated an organism from the blood of a series of seven patients, five with undoubted, and two with probable, chronic pemphigus. Four of the cases were undoubtedly of the malignant type. The organism was obtained repeatedly in every case, and was morphologically, culturally and immunologically the same. It is gram-positive, anaerobic, non-motile, ovoid or coccoid in form, resembling a strepto bacillus in certain respects, is pathogenic for guinea-pigs and rabbits, and possesses definite toxic properties. The bacterium has not been found in normal persons, or in those having certain other skin diseases.

Suggestive lesions have been produced with recently isolated strains of the organism, and a definite clinical picture experimentally demonstrated. It has been re-isolated from the blood of infected animals.

Cultures have been obtained from patients, both early and late in the disease and in intervening stages, and have been agglutinated in patients' serums. The organism has been named provisionally Bacterium pemphigi. To establish the etiologic significance of this organism, further studies are now in progress. [A. W. C.]

Direct Measurement of Venous Pressure in Man

Young, F. A. (*Canad. M. A. J.*, Vol. 13, No. 6, June, 1923), describes his method of measuring directly the venous pressure. He connects a piece of ordinary glass tubing, eight or ten inches long, to a number 18 or 19 gauge needle and measures with a wooden rule the height to which the blood rises in the tube when held vertically. As needles, especially of the smaller size, do not always work well, a second reading is made in cases of doubt. The patient is tested lying down with the flexor surface of the elbow propped up to the level of the heart. This latter level is considered to be 8 cm. deep from the sternum. The needle and tube are, of course, carefully sterilized, and

before use are lubricated by drawing a few drops of sterile paraffin into them.

It was found that the normal pressure ranged from 10 cm. to 14 cm. of blood, which is approximately equal to 10.5 cm. of water or 7 to 10 mm. of mercury.

It may be concluded: (*a*) that high venous pressure in cardiac cases is evidence of heart failure; (*b*) that under treatment the pressure returns to normal if the patient shows fair response; (*c*) that pulmonary cases accompanied by dyspnea probably have a high venous pressure; (*d*) that other debilitating conditions such as pernicious anemia, operations, and hyperthyroidism, do not appear to influence venous pressure. [A. W. C.]

Bismuth in the Treatment of Syphilis, Report of Clinical and Experimental Studies

Klauder (*Arch. Derm. and Syph.*, Vol. 7, No. 6, June, 1923) discusses the early literature on the use of bismuth in syphilis, and the chemistry of the bismuth preparations. Their untoward reactions are described: a stomatitis is frequent, accompanied by little or no salivation, thereby differing from mercurial stomatitis; a foul breath and gingival blue line, indistinguishable from the lead line may occur, and both these form early "danger signals," suggesting interruption of treatment by bismuth; chills and fever may occur soon after injections, while loss of weight, anorexia, and malaise may follow a prolonged course of bismuth; albuminuria, rarely a nephritis, may occur, therefore frequent examination of the urine is indicated; not yet knowing a great deal about the good or bad effects of the drug, one should be most careful to keep in mind the treatment of the patient as well as the disease; pain at the site of injection was very variable in this series, from very slight to very great, the aqueous solution of sodium and potassium tartrobismuthate being the most painful, while in oily suspension it was not very uncomfortable; potassium tartrobismuthate with butyn worked very well, while oil suspension of bismuth trioxide was not painful. Clinically, the primary, secondary, and late lesions cleared up very creditably (visceral and neurosyphilis were not included in this series), while the Wassermann reaction became negative after 2 gm. of the drug in most cases, while some required 3 gm. As further treatment was given these cases it was not shown how long the Wassermann reaction remained negative except in one case that would not continue after the first negative, and had a positive Wassermann again in four months. Probably due to delay in absorption, the therapeutic effect of bismuth was noted in some cases to last for some time after the drug was discontinued. Bismuth inunctions were first tried on rabbits, then on patients, with an effect inferior to that of mercury inunctions in the cases of human syphilis, and very creditable results in the rabbit. In rabbits a reaction occasionally occurred that comes in the Herxheimer group, giving additional evidence that bismuth is a powerful antisyphilitic remedy. From clinical and experimental study the spirocheticidal value of bismuth is placed above mercury and below arsphenamin, though an accurate comparison of the last two cannot be made because of the different method of administration. It is probable that bismuth has a distinct place in the treatment of patients who have discontinued arsphenamin prematurely and thus are likely to develop neurorecidives, and in patients who are hypersensitive to arsphenamin. [A. W. C.]

Bismuth in the Treatment of Syphilis

Hopkins, J. G. (*Arch. Derm. and Syph.*, Vol. 7, No. 6, June, 1923) showed by experimental work on rabbits that sodium and potassium tartrobismuthate has marked spirocheticidal power and curative action on syphilitic lesions in these animals, about as effective as neoarsphenamin and more so than salicylate of mercury. In the human it accomplishes at least apparent cures. It should be of value in cases resistant to other drugs. Bismuth should not be used alone, but in combination with our present drugs. [A. W. C.]

Bromide Eruption by Placental Transmission

Costello, J. P. (*Arch. Derm. and Syph.*, Vol. 7, No. 6, June, 1923) reports a case, apparently the only one so far reported, of an infant of three days whose mother had been taking bromide during the late pregnancy, the child having had no drug, but having received enough through the placental circulation to have a bromide rash and bromide demonstrable in the urine. The rash cleared in two weeks. [A. W. C.]

A Clinical and Biochemical Study of Neurosyphilis

Cornwall, L. D., and Myers, C. N. (*Am. Jour. Syph.*, Vol. 7, No. 2, April, 1923) present in great detail as Part 1 of their studies, analyses of the arsenic content of the spinal fluid after the administration of silver-arsphenamin. They found arsenic after two hours up to 143 mgm. per 100 gm. of dried specimen, while as late as 72 hours it was found up to 192 mgm. per 100 gm. of dried specimen. In general, the arsenic content falls after two hours, rises slightly between 24 and 48 hours, and at the end of 72 hours is present in greater quantity than at any time between two and 72 hours. [A. W. C.]

Sulfarsenol in the Treatment of Syphilis, A Preliminary Report

Irgang, S. (*Am. Jour. Syph.*, Vol. 7, No. 2, April, 1923) reports on the use of this new drug, $C_{14}H_{14}O_8S_2As_2N_2Na$, in 20 cases. The drug used intravenously affected favorably all types of lesions, especially well the annular, while the papulopustular lesions were relatively resistant. Intramuscularly, the lesions were equally rapidly cleared, but the pain was pretty severe in most cases. Subcutaneously, the pain was slight when small doses (0.06-0.18 gm.) were used, but considerable when that amount was exceeded. [A. W. C.]

Paresis with Negative Spinal Fluid

Wynn, J. (*Am. Jour. Syph.*, Vol. 7, No. 2, April, 1923), reports in detail two such cases who had had considerable intravenous and intraspinous treatment until the cerebrospinal fluid was negative, and yet who developed typical clinical paresis, showing that so-called precision methods should not replace but should augment careful clinical study of cases. [A. W. C.]

Mercury Inhalation Therapy of Syphilis

Gutman, J. (*Am. Jour. Syph.*, Vol. 7, Nos. 1 and 2, Jan. and April, 1923) discusses in detail the literature on the subject, some of which, especially of recent date, is not favorable, describes his apparatus for the administration of mercury vapor, and strongly recommends this method because the absorptive area of the respiratory tract is many times greater than that of the skin, the pulmonary circulation is so accessible and rapid, the lining membrane so thin, as to readily take up the mercury, peculiarly absorbable in vaporized form. [A. W. C.]

Tartrobismuthate in Treatment of Syphilis

Myers, C. N., and Corbitt, H. B. (*Am. Jour. Syph.*, Vol. 7, No. 2, April, 1923) discuss the now rather

large literature on bismuth in syphilis, the chemistry and toxicology, and their experimental studies. They found practically no trypanocidal activity with any of the bismuth preparations studied, but feel that the combination of bismuth and arsenic offers some promise. As a therapeutic agent in syphilis, they place bismuth inferior to arsphenamin, and superior to mercury. [A. W. C.]

A Case of Syphilitic Chancre on the Scrotum of a Patient Without Penis

Oelze, F. W. (*Am. Jour. Syph.*, Vol. 7, No. 2, April, 1923) reports such a case in a Russian at Leipsic, who gave no explanation of the occurrence of the lesion. [A. W. C.]

Blood Transfusion: A Study of Two Hundred and Forty-Five Cases

Copher, G. H. (*Annals of Surgery*, July, 1923), presents an article of 28 pages rather technically presented, but he makes a careful analysis of the various phases of the subject, especially blood groupings and reactions to transfusion. [E. H. R.]

A Study of the Viability of Bone after Removal from the Body

Haas, S. L. (*Arch. of Surg.*, July, 1923), states that the osteoblastic cells of bone will survive an exposure period of 19 hours in air at room temperature. There is sufficient active retained vitality in the exposed cells to form callus, and, in some instances, union of a fractured bone after its transplantation into a muscle of the same animal, independent of any other source of osseous elements. The demonstration of the survival of the cells of bone after removal from the host adds uncontroverted evidence to prove that the osteoblastic cells of a bone graft play an independent active rôle in the processes of regeneration. [E. H. R.]

Studies in Experimental Traumatic Shock. VIII. The Influence of Morphin on the Blood Pressure and Alkali Reserve in Traumatic Shock

Cattell, McKeen (*Arch. of Surg.*, July, 1923) states that in the cat morphin does not accelerate the production of shock, as measured by the blood pressure, and in the normal animal, even in large doses, it causes only a temporary depression of the blood pressure. The reduction of the blood pressure to 60 mm. of mercury in control animals resulted in a rapid fall of the alkali reserve which remained at a low level. With morphin, however, in the large doses used, the low pressure resulted in practically no reduction of the alkali reserve, or, if the morphin was injected after an hour of low pressure, when the carbon dioxid capacity of the blood was already low, there was recovery almost to normal during the following two hours. Experiments, carried out in collaboration with Dr. J. C. Aub and Miss E. M. Bright, indicate that in the cat the injection of morphin in large doses results in only a slight and temporary fall in gaseous metabolism. The changes in the gaseous exchange are probably not sufficient to explain the increase in the alkali reserve through a decrease in the oxygen requirements of the tissues. [E. H. R.]

The Skin Signs, or Viscerosensory Phenomena in Acute Appendicitis

Livingston, E. M. (*Arch. of Surg.*, July, 1923), finds that all cases of acute appendicitis in which the region has not become gangrenous or necrotic present localized skin signs. These may be found in a triangle, the superior limb of which runs from the umbilicus to the summit of the right iliac crest; the inferior limb, from the right iliac crest to the right pubic spine; and the base from the pubic spine back to the umbilicus. The skin signs are of significance only in the center of this triangle. The presence of skin signs within the triangle described confirms diagnosis of appendicitis, but not all cases of gangrenous or perforated appendicitis present these signs. If skin signs are negative or are present elsewhere, in the absence of signs of gangrene or rupture of the appendix, the case is not one of acute appendicitis.

The author tabulates a considerable series of cases and presents clinical data confirming his opinions. This would seem a fairly reliable bit of confirmative evidence. [E. H. R.]

Histopathology and Etiology of Varicose Veins

Nicholson, B. B. (*Arch. of Surg.*, July, 1923), states that since the saphenous opening is always protected by two or more valves, and the saphenous wall must, at least intermittently, bear the weight of the contained column of blood, it appears that the primary cause for varicose veins is not valvular insufficiency and static pressure. On the other hand, valvular insufficiency, which allows an ill-directed and retarded blood flow, is a very important secondary factor. The infrequency of varices in the arms, where the weight of the column of blood in the veins is from a level only a little above the elbow, proves that static pressure is a secondary factor. Similarly, the relatively less severe process in the upper saphenous, as compared with lower levels, supports this conclusion. The primary cause may be mechanical, trophic, inflammatory or toxic. Valves in the veins of the leg do not relieve the vessel wall of the static pressure exerted by the contained column of blood. During the brief interval of contraction of the muscles of the leg, the static pressure of the column of blood above the site of contraction is not exerted on the vessel wall below. Even during this interval the vessel wall is not relieved of any pressure, for the arterial pressure in the lower part of the vessel must be greater than the static pressure normally exerted by the column of blood in the saphenous. The chief functions of the valves are: (*a*) to aid the muscles as they contract in pumping the blood toward the heart; (*b*) to direct the blood toward the heart; (*c*) to protect the openings of small branches from a backward flow, and (*d*) to prevent blood from being forced backward by intermittent muscular or mechanical pressure. An erect posture, demanding little activity of the legs, tends to induce varicosis, or aggravates the condition, if already present. [E. H. R.]

End-Results of Surgery of the Thyroid Gland

Pemberton, John, deJ. (*Arch. of Surg.*, July, 1923), gives a brief tabulated summary of 1983 operations performed on 1497 goiter patients, with a mortality by operation of .095 per cent. and by case of 1.2 per cent. The article is mainly interesting from a statistical point of view. [E. H. R.]

Pyogenic Infection of the Parotid Glands and Ducts

Blair, V. P., and Padgett, E. C. (*Arch. of Surg.*, July, 1923), believe that acute suppurative parotitis is, in the great majority of cases, an ascending infection from the duct related to decreased salivary flow, fever and depressed general condition. Early adequate liberation and drainage of the parotid gland is a safe and useful procedure in all cases of severe septic parotitis not plainly terminal, and in some cases it may be life-saving. Meatotomy of the duct

is useful in certain cases associated with obstruction not due to stones.

They report on a small group of cases and present an article of 33 pages mostly devoted to cases illustrating clinical points.

The article is of considerable interest and value.

[E. H. R.]

THE CHEMICAL PATHOLOGY OF PYLORIC OCCLUSION IN RELATION TO TETANY. A STUDY OF THE CHLORID, CARBON DIOXID AND UREA CONCENTRATIONS IN THE BLOOD

MURRAY, H. A., JR. (*Arch. of Surg.*, July, 1923), states that five cases of pyloric stenosis are reviewed. Two other cases with somewhat comparable findings are included: one patient had postoperative gastric dilatation; the other, carcinoma of the jejunum with stenosis. With stenosis of the pylorus, hydrochloric acid cannot pass into the intestines and be reabsorbed. It is expelled by vomiting or washed out by gastric lavage. The result is a disturbance of the acid-base balance in the blood and tissues. The blood findings in our patients were similar to those in dogs after experimental pyloric occlusion, namely, an increased carbon dioxid and urea and a diminished chloroid content. The most abnormal values found were: carbon dioxid, 107 per cent. by volume; chloroid, 2.5 gm. per liter, and urea 334 mg. per hundred cubic centimeters. In the dog experiments, it was found that the blood was more alkaline than normal. There is almost certainly a relationship between the recorded blood changes and the condition of tetany that may develop in severe cases. It is considered that the cases presented, the experiments summarized and the literature cited make the assumption that nerve irritability is increased by a fall in the hydrion concentration of the blood or by a rise in the sodium calcium ratio highly probable. The latter may be brought about by adding dissociable sodium compounds or precipitating calcium. Whether the hydrogen ion is active because of its effect on the calcium ratio is still an open question. The increased electrical resistance found in two dogs and the lowered serum conductivity in one patient are very suggestive and needs investigation. The treatment of gastric tetany is operative. As far as we know, it is always the result of obstruction of the pylorus, due to gross pathologic changes. There are other forms of tetany that are not associated with pathologic gastric conditions, from which it must be differentiated. This can usually be done by suitable blood analyses.

Conclusion.—Pyloric stenosis, particularly when attended by persistent vomiting, is followed by a rise in the total carbon dioxid and a fall in the chlorid content of the blood plasma, and later, it seems, by an increase in the nitrogen catabolites.

There appears to be a causative relationship between these findings and nerve hyper-irritability.

[E. H. R.]

BLOOD PRESSURE IN THE NEWBORN FOLLOWING NORMAL AND PATHOLOGICAL LABOR

REIS, R. A., and CHALOUPKA, A. J. (*Surg., Gyne. and Obstet.*, August, 1923), state that:

1. The average systolic blood pressure during the first day of life in full-term infants, following normal spontaneous labor, is 43 millimeters mercury.

2. The blood pressure increases daily until, on the tenth day of life, the average systolic blood pressure is 78 millimeters.

3. The greatest rise is during the first three days, reaching 59 millimeters on the fourth day.

4. The blood pressure varies with the birth weight, being higher in heavier infants.

5. Sex, jaundice, pulse rate, and temperature and caput succedaneum with no signs of compression apparently have no influence on the blood pressure.

6. Infants delivered by abdominal Cesarean section have normal blood pressure.

7. Premature infants have low systolic blood pressures corresponding to the length of gestation.

8. Twins have low blood pressure readings proportional to the prematurity and the birth weight.

9. The greatest increase in blood pressure is shown after midplane forceps extraction and version extraction; lesser increases were shown after low forceps extractions, relatively dry labors, prolonged second stages, and in infants with large cephalic measurements.

10. The increased blood pressures found seem to be due directly to increased trauma to the fetal head.

[E. H. R.]

AN EXPERIMENTAL ANATOMICAL INVESTIGATION INTO THE BLOOD AND BILE CHANNELS OF THE LIVER

SEGALL, H. N. (*Surg., Gyne. and Obstet.*, August, 1923), presents a very thorough experimental piece of work done with especial reference to the compensatory arterial circulation of the liver in its relation to surgical ligation of the hepatic artery. The livers were injected with various preparations and then examined under x-ray. Very beautiful plates are presented showing the blood and lymph and bile channels of the liver. This is a very nice piece of experimental work.

[E. H. R.]

GASTRIC SYPHILIS: A REPORT OF TWO CASES PROVED ANATOMICALLY

BRAMS, W. A., and MEYER, K. A. (*Surg., Gyne. and Obstet.*, August, 1923), make an interesting report on the pathological findings in two cases, and they are of the opinion that the findings in x-ray examination vary to a great extent but are usually very much like those found in carcinoma. Signs of obstruction and filling defects were the chief features. The clinical evidence of gastric syphilis consists of pain in the epigastrium, low acidity, marked emaciation, history or evidence of luetic infection, and a good result with specific treatment. To these should be added that the patient is often under the usual age for carcinoma and that the course of the disease is often over a period of years. The anatomical features are multiple, irregular ulcers, thick submucosa, vascular changes, miliary gummata, and perivascular infiltration.

A bibliography of 118 references is appended.

[E. H. R.]

STRANGULATED DIAPHRAGMATIC HERNIA OF TRAUMATIC ORIGIN

CROOK, J. L. (*Surg., Gyne. and Obstet.*, August, 1923), writes as follows:

"Our fellow member, Dr. H. B. Stone, at the meeting of this association last year, in his judicial discussion of the question of approach seems to me to have fairly presented the subject from both angles. I believe his conclusions are sound and deserve restatement and emphasis:

"1. Abdominal exploration is essential in the great majority of cases of diaphragmatic hernia.

"2. Thoracic approach greatly facilitates the necessary operative steps.

"3. The method of choice, therefore, for the routine handling of these cases should be by combined abdominal and thoracic incisions.

"4. These incisions are best made separately instead of by the French method of a continuous incision."

I wish to add a fifth conclusion:

"5. The x-ray is a positive means of diagnosis in this condition and its use should never be omittted."

[E. H. R.]

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THE GENESIS AND RISE OF MEDICAL JOURNALISM

MEDICAL journalism was inaugurated on October 5, 1823, when Thomas Wakley founded the *Lancet*. It is worth while to recall, that not long after the first issue of the London medical weekly appeared, the BOSTON MEDICAL AND SURGICAL JOURNAL was founded in Boston. There had been many periodical publications before 1823, but they did not represent what is understood as journalism. One hundred years ago, the time was parlous for medicine and opportune for reform. There was something radically wrong with medical education and practice in England and in New England. No doubt medical education in Massachusetts and the neighboring States presented problems to be solved similar to those in the old country. At any rate, in Great Britain medical affairs were honeycombed with abuses. The tale, a fascinating and stirring one, is graphically told in a profusely illustrated and well got up special number of the *Lancet* brought out on October 6, last, to commemorate its centenary. The history of the foundation, and of the first thirty years of the *Lancet* is so bound up with that of the founder that they are virtually the same. Wakley was the *Lancet* and the *Lancet* was Wakley. The journal, with its intentionally suggestive name, was the instrument fashioned by its maker to relieve the body medical of at least some of the poisons that infected it and rendered it comparatively useless, or even dangerous. Wakley, twenty-eight years old, recently qualified, had no culture, no literary experience or attainments—indeed, had never written a line—no social standing nor powerful friends, but he was a commanding personality, and he knew that reforms in medicine were overdue. It was an age of reform. He felt for the wrongs of others, and, above all, he was spurred to fight with tooth and nail because he had a personal grievance. He who suffers from a grievance himself is best able to appreciate the point of view of those who suffer in a like manner, and is the most persistent unrelenting foe. Wakley, too, was not a thin-skinned man, and was mentally and temperamentally fitted for the fight waged in the somewhat coarse and quite outspoken manner of the age to which he belonged. He had need of all his courage and phlegm, and it seemed, at first, as if he were a Don Quixote, tilting against windmills. The disabilities of the medical student and the young doctor, unless they had money and were willing to "pay their way," were many and various. In the first instance, if the student was not able and unwilling to pay heavily for the privilege of becoming the pupil of a well-known physician or surgeon, his chance of getting a satisfactory medical education was very poor, and his chance of advancing when qualified in the profession in accordance with his merits were small indeed. Brains, perseverance, aptitude, were of little avail if the possessor were without money or interest.

The honorary staffs of the hospitals practically held the future of medical students in the hollow of their hands, and money was the final arbiter. They mapped out the schemes of education; they were lecturers and received the students' fees; they set the examination papers; they were the examiners, and, lastly, they, as officers of the Royal College of Surgeons of England, the only really authoritative body in medicine in the country, controlled the calling of medicine. Wakley, therefore, had allotted to himself an immense task in opposing the time-honored privileges of the medical profession.

The first ten years of the *Lancet* were given over to attacking in their most vulnerable parts this privileged body of medical men. He appealed to public opinion, or rather to public interests, and for the first time in the history of medicine the medical man was set forth as a public servant, and not, as hertofore, a mysterious councillor. The *Lancet*, the only weapon as yet in the hand of Wakley, attacked the privileged classes, first, as hospital author-

ities, who by nominating their followers to their own institution, irrespective of their fitness, were betrayers of public charities. Secondly, in that, as controlling medical education, they appointed themselves as examiners for the sake of the fees, when they were obviously incapable of performing their duties properly. Thirdly, that as clinicians and lecturers, they were thoroughly careless and incompetent, their ruling object being to obtain the fees and not to impart knowledge.

However, in spite of the vigorous campaign that Wakley by means of the *Lancet* carried on, no real results ensued. The officers of the College of Surgeons of England, those against whom the attack was mainly directed, seemed to be firm believers in the old adage, "hard words break no bones." Moreover, feeling very secure in the possession of a new charter, they recognized no sufficiently compelling reason to confess the error of their lucrative ways, and repent and reform, and decided to pay no attention to the pestilential radical editor and his ungentlemanly sheet. But Wakley was a man of resource, as well as determined, and showed that he had another and more deadly string to his bow by being elected to Parliament, soon after the passage of the first Reform Bill. The combination of Wakley the propagandist member of Parliament and of Wakley the editor of the reforming medical journal—the *Lancet*—was irresistible. As editor, the member for Finsbury was able to obtain information well calculated to forward expeditiously his plans for the underpinning and finally the demolition of medical privileges and other abuses.

He drafted the first medical reform bill introduced into Parliament, a bill designed to repress quackery and to remove educational abuses. This was the greatest parliamentary triumph of Wakley, in conjunction with the *Lancet*, and should establish firmly the fame of both as perhaps the most effective joint agency for medical reform of modern times. While Wakley's bill did not become law, by his propaganda he had so educated public opinion that when, in 1858, an Act resembling in almost all particulars the one drafted by him was introduced into Parliament, it was passed without question. It may be stated emphatically that it was owing to Wakley's labors as a journalist and politician that the British medical profession was raised to its present high status and that a new era in medical practice set in.

But in the years that followed, the *Lancet* has continued to do excellent service to the cause of medicine and medical science, and has fulfilled the objects avowed by Wakley to be his hope in his prefatory note in the first issue. Perhaps its great and successful campaign against adulteration of food has been its most signal achievement. It has recorded and discussed every notable happening in medicine, surgery, public health, and domestic hygiene; in fact, all relating to health and the fight against disease in that remarkably prolific period for such happenings—the past one hundred years. However, he who runs may read.

This editorial was written to point to the genesis and development of medical journalism, brought to mind by the centenary of the *Lancet*, which blazed the trail; and to emphasize the amazing influence medical journalism has had for good on medicine and everything akin to it. Thomas Wakley's title to fame rests on the fact that by means of medical journalism, of which he was the founder, he threw the clear light of publicity on medical questions, creating a "health conscience," which is, after all, our greatest safeguard against disease.

During eighty-five years the editorship of the *Lancet* remained in the Wakley family. The founder was succeeded in the editorship by his two sons and his grandson. The present editor, Sir Squire Spriggs, is thoroughly imbued with the best *Lancet* traditions, for he has been with the journal for more than thirty-five years, for several years as assistant editor, and for the past fifteen years as editor.

As we celebrate this year the centenary of medical journalism and do reverence to the venerable *Lancet*, we must remember that our own time is soon coming, for in this respect New England is but a little way behind Old England. The *Lancet*, father of all medical journals, was but a few years old when our own JOURNAL was first published. Let us hope that our record of a hundred years' service will compare not unfavorably with that of our distinguished contemporary.

INCREASING THE INFLUENCE OF THE MEDICAL PROFESSION

THE remarks made by Dr. Merrill of Pittsfield at the last meeting of the Council deserve the careful consideration of every member of the Massachusetts Medical Society. He pointed out clearly the need of educational work, not only by every physician in his own community, but by the organized profession, if our principles and ideals are to be understood and in any measure realized. The recent organization of those staunch friends of medical progress who are determined to fight the ignorance and fanaticism of the opposing useful and painless animal experimentation shows clearly what can be accomplished when once the public understands the truth.

There is no lack of members who are anxious, as Dr. Merrill said, to know what they can do for the Society. In the rush of the day's work, however, attention is not directed to this aspect of service to the community. It is not surpris-

ing that some ask at times what the Society does for them. On the principle that it is more blessed to give than to receive, the Society is endeavoring more effectively to show what the members can do in their time. But cannot the Society do more for its members in many different ways, and is not a closer welding together of the scattered members an essential step to greater usefulness?

The great success of the combined meetings of the different districts has been a strong factor in creating a powerful medical public opinion. These meetings, however, deal usually with particular topics and do not come often. The interest taken in the regular meetings of the various district societies depends on many circumstances. In some districts the meetings are always well attended and successful; in others, the interest at times lags. The officers, and particularly the secretaries, of certain districts compel successful meetings because of the programs they provide. If personalities may be pardoned, the secretary of every district society would benefit by a full knowledge of the work of Dr. Bradford Kent of Norfolk. The meetings of each district would benefit from a knowledge of what the others are doing. Dr. Bartol as President did a wonderful work in coördinating certain aspects of the work of the districts, and this will be carried on by Dr. Bigelow.

It would be a great misfortune for the district societies to lose their identity and initiative, but the JOURNAL ventures the suggestion that informal meetings each year of the presidents and secretaries of the district societies would be of great benefit to the members, and would do much to increase the influence of the Society.

THE PRESENT-DAY TREND OF MEDICAL PRACTICE

DR. MATTHIAS NICOLL, JR., Commissioner of Health of New York State, in a recent address delivered before the New York State Sanitary Officers and Public Health Nurses at Saratoga Springs, summarized the development of medicine in the past and clearly pointed out the lines along which it is now expanding and will continue to expand. His lesson is too valuable to pass over lightly and it should be emphasized again and again in order that he who runs may read. For the old order is passing and he who would keep abreast of the times must note the writing on the wall. Curative medicine, always unsatisfactory and limited in its application, cannot continue to hold its place in the first rank; prevention of disease is coming into its own as the gigantic duty of medicine, and we must follow its lead or drop hopelessly into the rear.

The duties of the physician were once summarized by a famous Frenchman in a conversation with Dr. Shattuck: "To cure sometimes, to relieve often, to console always." If prevention can be substituted for consolation, medicine will have taken a great stride forward.

It has always been but a little time before the last word in medicine of any age has become medical history and the world has been amazed at its futility. And yet, "despite the devoted army of teachers of modern medical thought who day after day penetrate to the utmost limits of human habitation, the majority of people today still cling to the traditions and practices handed down with but little modification for thousands of years."

The importance of preventive medicine, however, continually crops up throughout human history, and its recorded birth is marked by the hygienic laws inherited from the early Egyptians in part and attributed to Moses, "while specific preventive therapy may be dated—perhaps traditionally—from the eleventh century, when the Chinese are said to have practiced direct inoculation against smallpox."

Preventive medicine is the latest, and logically, Dr. Nicoll believes, the last, phase of medical development, and it is that phase with which the general practitioner must interest himself if he is wise and wishes to go forward.

Pathology is the foundation stone of our knowledge of disease, but it is a foundation stone in which we have been strangely engrossed to the neglect of the structure which it is intended to support. "The path from the interesting case to the deadhouse has been too well trodden by the students of modern medicine, while the causes that have brought about those interesting and often fatal cases have been but too little dwelt upon."

Public health is the infant of medicine, but it is a lusty infant and making prodigious gains. The time is soon coming when it will rank with and forge ahead of orthodox medicine. The child of today is the man of tomorrow, and the man of today, tomorrow is—dust.

CO-DISCOVERER OF INSULIN

CHARLES H. BEST, a medical student of the University of Toronto, born in Maine of Canadian parentage, addressed the medical students of Harvard University at the Medical School on October 26. Introduced by President Eliot, he was acclaimed as one who, even before receiving his medical degree, had entered that small group of investigators in medicine who have given discoveries of great value to the world.

On account of the interest that is being taken in the project to build a dormitory at the Medical School, Mr. Best spoke first of the various functions that Hart House fulfils for the University of Toronto. Hart House, although not a dormitory, is something more than a club, for its membership comprises the entire university, it is a common dining-hall, houses the various

associations of the university, gymnasia and a theater, and is a common meeting ground for students, instructors and graduates.

Mr. Best then related with graphic clearness to an intensely interested audience the early steps in the discovery of insulin, when Banting, a comparatively obscure surgeon, came to Toronto and begged for a laboratory and a few dogs in order to perform his experiments which, with the assistance of Best, produced the epoch-making discovery.

The same morning that Mr. Best spoke, the papers had announced the awarding of the Nobel Prize to MacLeod and Banting—the second time that any Nobel Prize has gone to Canada.

A dramatic moment occurred following Mr. Best's talk when Dr. Joslin read a telegram he had just received from Dr. Banting expressing regret that Best had not been included in the award and assigning one-half of his own share to his co-worker and friend.

PROPOSED DESTRUCTION OF THE LISTER WARD

In the Royal Infirmary at Glasgow is situated the original ward in which Lister carried on his revolutionary work on surgical antisepsis. It would seem that such a historic landmark ought to be preserved at all costs, yet the managers of the Infirmary have decreed that it shall be destroyed. Their reasons for this unfortunate decision are:

1. That the ward may be septic, and therefore a danger to the Infirmary.
2. That the space occupied by the ward is essential for light and air.
3. That its retention would affect the symmetry of the two sides of the Forecourt.

James A. Morris, a Fellow of the Royal Institute of British Architects, has issued a pamphlet answering these objections in what would appear to be a perfectly satisfactory manner. He would incorporate the ward in a new gate-house block in such a way that it would neither obstruct the light and air of the Infirmary, nor spoil the symmetry of the group of buildings. This could be done at an estimated cost of $1800, surely a small price to pay for the preservation of a building so significant in the history of surgery.

EXPOSÉ OF FRAUDULENT MEDICAL DIPLOMAS

The *St. Louis Star* under date of October 19, 1923, published an exposé of a fraudulent scheme for the sale of certificates of education and medical diplomas, and names W. P. Sachs, Dr. Robert Adcox, Dr. Ralph Voight and Dr. D. R. Alexander. Sachs was former state examiner of public schools in Missouri. Dr. Voight lived in Kansas City, Dr. Adcox in St. Louis and Dr. Alexander was secretary of the Kansas City College of Medicine and Surgery.

It is alleged that at least one hundred practicing physicians throughout the United States have fraudulent diplomas secured through these people.

Sachs has made a confession before circuit attorney Sidener and prosecuting attorney Jones of St. Louis County.

Sachs is a former Lutheran clergyman and made his confession without promise of immunity in an effort to atone for his wrong doings. According to *The Star*, Adcox agreed to obtain a high school certificate and four years' credit in a medical school for an applicant and to enroll him in the St. Louis College of Physicians and Surgeons for a post-graduate course, all for the sum of $1,200, and that at the close of the college year the applicant would get a diploma from the College of Physicians and Surgeons of St. Louis. The College of Physicians and Surgeons of St. Louis is a class C school.

Miscellany

PRIZE ESSAY CONTEST OF THE AMERICAN CHEMICAL SOCIETY

Payson Smith, State Superintendent of Education, has been officially notified of the opening of the Prize Essay Contest of the American Chemical Society in which all students of high and secondary schools in the State of Massachusetts have been invited to compete in a national contest for $10,000 in cash prizes and scholarships to Yale, Vassar and other universities and colleges.

The contest, which is the result of the gift of Mr. and Mrs. Francis P. Garvan of New York, is a memorial to their daughter, Patricia, and is intended to stimulate interest among high school students in the development of chemical science in this country. All arrangements for the contest are in the hands of the Committee on Prize Essays of the American Chemical Society, with headquarters at the Munson Building, New York City. Six prizes of $20 in gold are to be awarded in each State in the Union, and scholarships to Yale and Vassar will be given for the six best essays in the United States. These scholarships will carry with them tuition for four years in chemistry or chemical engineering, and $500 a year in cash. In addition to these awards many other scholarships will be offered through various universities and colleges.

A set of five books, which include Creative Chemistry by Slosson, The Riddle of the Rhine by Lefebure, The Life of Pasteur by Vallery-Radot, Discovery, the Spirit and Service of Science by Gregory, and the Future Independence and Progress of American Medicine in the Age of Chemistry by a Committee of the American Chemical Society, is being sent from the New York headquarters to every accredited high and secondary school in the country, and sets of these reference books are being placed in the leading libraries of the State for the use of students who enter the competition.

The contest, which has the endorsement of Dr. John J. Tigert, Commissioner of Education of the United States, is fully described in a pamphlet, which will be distributed through the high schools and the libraries. This pamphlet contains in addition to facsimile letters of endorsement from Dr. Tigert and from Dr. E. C. Franklin, President of the American Chemical Society, a full outline of the terms and conditions of the contest, together with the letter of gift of Mr. Garvan. The entire supervision of the contest and the award of the prizes has been left to the American Chemical Society by Mr. Garvan. H. E. Howe, Editor of *Industrial and Engineering Chemistry*, the official organ of the American Chemical Society, has been named as chairman of the Committee, and he is assisted by Dr. Wilder D. Bancroft, Professor of Chemistry at Cornell University, one of the best known men in educational circles in this country, and president of the American Chemical Society in 1910; by Dr. Charles H. Herty, president of the Synthetic Organic Manufacturers Association and president of the American Chemical Society in 1915 and 1916; and by Alexander Williams, Jr., of New York, who is acting as secretary of the committee.

It is the plan of the Committee in charge to appoint a national committee of fifteen who will be chosen from all walks of life; from among the leading educators, scientists and public spirited men and women of the country. It will be the duty of this committee to judge the essays and to award the scholarships in the national competition. They will be assisted in their work by State Committees of eleven whose duty will be to award the prizes in the State competitions.

PHYSICIANS' AUXILIARY TO THE BOSTON HEALTH DEPARTMENT

Evidence of the physician's unselfish devotion to duty manifested itself in the past in thousands of examples in the curative field. A splendid constructive endeavor in the present field of prevention is shown by the voluntary organization of a group of the West End practitioners of Boston who allied themselves to the Boston Health Unit in the formation of a Medical Advisory Committee to the Director, Dr. Charles F. Wilinsky, of the Boston Health Department. In organizing they have dedicated themselves and their united efforts to a program of prevention of disease, without a selfish thought of the possibilities of the reduction of their private practice which might be caused by the diminished morbidity resulting from a program of preventive medicine.

The following comprise the personnel of the Medical Advisory Committee, representing the sentiment of the West End physicians:

Dr. N. M. Levins, Chairman; Dr. George Oberlander, vice-chairman; Dr. S. W. Myers, Secretary; Dr. DuVally, Dr. S. Elkin, Dr. Feldman, Dr. B. Friedman, Dr. A. J. Hurwitz, Dr. H. Rothblatt, Dr. S. Saltz, Dr. J. Shubert, Dr. Charles Towle.

EDUCATIONAL CAMPAIGN AGAINST CANCER

The American Society for the Control of Cancer announces the plan of educational campaign which it so successfully conducted as "cancer weeks" in 1921 and 1922 has been modified this year as a foundation on which to build permanent and consistent educational work. The first campaign began in the Northwest on October 15 and will extend to November 14, 1923. The last will end May 14, 1924, in the New England States. The schedule for these campaigns is given below.

The chief object of the campaign is, by means of authoritative information, to acquaint the public with the early symptoms of cancer and the necessity for competent and prompt treatment of the disease. People will be told that accurate knowledge and prompt action will prevent deaths from cancer, and that one of the most treacherous things connected with the disease is the fact that it is painless in the beginning. A little knowledge, in this instance, is not a dangerous thing, but of the utmost value.

Through lectures, lantern slides, motion pictures, circulars, posters, and other publicity, the Society will present only those phases of the cancer problem which have been well established, and are based on sound opinion. It is its hope that the people will become so informed and so alert that they will act as promptly when cancer is suspected as they now do on discovering symptoms of appendicitis.

The work of the Society bespeaks the coöperation of all national, state, and local health agencies that are vitally concerned with the public health. All persons interested in these local campaigns should get in touch with the headquarters office. The Society will be glad to an-

swer questions or provide information upon written request. The address is 370 Seventh Avenue, New York City.

Following is the schedule for the campaign of 1923-24:

District	States and Provinces Included in District	Date of Campaigns
Northwestern	Washington, Idaho, Oregon, Montana, Wyoming, North Dakota, South Dakota, Minnesota, Nebraska, Iowa, British Columbia, Alberta, Saskatchewan, Manitoba	Oct. 15 to Nov. 14
Southwestern	California, Nevada, Utah, Arizona, Colorado, New Mexico, Texas, Kansas, Missouri, Oklahoma, Arkansas	Nov. 15 to Dec. 15
Southeastern	Louisiana, Mississippi, Tennessee, Alabama, Georgia, Florida, North Carolina, South Carolina, Virginia	Jan. 15 to Feb. 14
Lake	Wisconsin, Michigan, Illinois, Ohio, Indiana, West Virginia, Kentucky	Feb. 15 to Mar. 14
Eastern	Pennsylvania, Maryland, Delaware, District of Columbia, New Jersey, Connecticut, New York, Ontario	Mar. 15 to Apr. 14
New England	Rhode Island, Massachusetts, Vermont, Maine, New Hampshire, Nova Scotia, New Brunswick, Prince Edward Island, Newfoundland, and Quebec	Apr. 15 to May 14

Public Health Reports, October 5, 1923.

CHANGES OF ADDRESS

Dr. Samuel H. Durgin has changed his residence from Braintree to 10 Park Vale Avenue, Allston, Mass.

Dr. Harriet E. Rogers is opening an office at 75 Day Street, Norwood, Mass.

Dr. William Duncan Reid has closed his office at 270 Commonwealth Avenue, Boston, and has moved to 4137 Kenwood Avenue, Kansas City, Mo.

Dr. Stanley Cobb has gone abroad for the winter, and his mail should be addressed, care Bankers' Trust Company, 27 Old Broad Street, London E. C. 4.

Dr. Arthur E. Brides has changed his address from 167 Hicks Street to 111 Montague Street, Brooklyn, N. Y.

Dr. Charles C. Lund has changed his address from Massachusetts General Hospital to 527 Beacon Street, Boston.

Dr. Albert Marsh has removed from Wellesley, Mass., to Hillcrest, Southboro, Mass.

Dr. Edward S. Winslow has moved from Easthampton to 101 Main Street, Harwichport, Mass.

POLIOMYELITIS IN NEW YORK CITY

From January to October of this year there have been 440 cases of poliomyelitis in New York City. About 75 per cent. of the cases have occurred in children under five years of age. The disease has been of a mild type with a mortality rate of about 7.6.

The occurrence of two cases in a family has been extremely rare. The Department of Health has not resorted to drastic measures and has allowed the cases to remain at home under quarantine for three weeks, and excluding from school or work after contact with a case all persons in a family who attend school or handle food.

FELLOWSHIP FOR THE STUDY OF SOAP

The Palmolive Company has established a Fellowship of $2000 annually for the purpose of stimulating the scientific study of the chemistry, physics, and colloidal principles concerned with soap. The first holder of this Fellowship will be Paul H. Fall of Chicago, who will carry on his experiments at Cornell.

CHRISTIAN SCIENCE

Charles E. Huneister, 449 North Central Avenue, Chicago, Ill., is preparing a book giving a showing on Christian Science, and desires contributions of facts showing cases that would probably have been helped by proper medical or surgical treatment, but which through reliance on Christian Science have resulted in disaster to the patient.

Communications will be held strictly confidential.

LISTER ORATION

The first of the Lister Orations, to be given every three years under the arrangement of the Canadian Medical Association, will be given next year, at the annual meeting in Ottawa, by Dr. John Stewart of Halifax, a former house surgeon of Lister's.

INTERCHANGE OF HEALTH OFFICERS

The Third General Interchange of Health Officers arranged by the Health Section of the League of Nations is now taking place in the United States.

Representatives from France, England, Italy,

Russia, Poland, Spain, Holland, Belgium, Greece, Jugoslavia, Germany, Switzerland, Norway, Mexico, San Salvador, Brazil, Chile and Canada arrived in the United States the first week in September and will remain approximately three months.

RABIES IN THE UNITED STATES

THERE has been an apparent increase in rabies among animals in the United States during the past few years, according to the weekly bulletin of the New York Department of Health. Data obtained in the form of replies to a questionnaire sent to all the states is analyzed. Forty states replied.

Rabies was first reported in this country in 1768, at that time in the northern Atlantic states. The disease slowly spread, although even in 1908 it was still mainly confined to the eastern half of the country. Predatory animals are largely responsible for its further spread, for in 1909 an outbreak occurring in California spread eastward among the coyotes and met a similar invasion spreading westward among coyotes and prairie dogs. The Rocky Mountains apparently halted the invasion from the westward, while the antipathy of sheep raisers to dogs and predatory animals checked its spread from the east. The report of eight human deaths in Missouri and two in Iowa seems to indicate, however, that the disease is moving into new territory. A check on the disease in the northern states is the severe winter of four or five months' duration, which decreases the roaming radius of dogs, allowing those infected to die before infecting others.

A total of 5558 heads examined showed 2699 positive findings, or 48.6 per cent. These figures have come from 29 states only. Seventy-four human deaths were reported for 1921, and complete records on 168 deaths during the period 1917-1921 show that 39 of this number died during or after Pasteur treatment.

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

RÉSUMÉ OF COMMUNICABLE DISEASES, SEPTEMBER, 1923

GENERAL PREVALENCE

The more prevalent diseases showing an increase over the previous month were as follows:

	Sept. 1923	August 1923	Sept. 1922
Chicken-pox	137	116	53
Diphtheria	612	564	578
Mumps	108	101	67
Pneumonia, lobar	110	80	86
Scarlet fever	312	282	281
Tuberculosis, pulmonary	494	432	402
Typhoid fever	98	64	130
Syphilis	165	147	179

RARE DISEASES

Anterior poliomyelitis was reported from Adams, 1; Amesbury, 2; Ashburnham, 1; Boston, 6; Braintree, 1; Brookline, 1; Concord, 1; Fall River, 1; Holyoke, 2; Hubbardston, 1; Leominster, 1; Lowell, 4; Malden, 1; Medford, 1; Newton, 1; Northampton, 2; Palmer, 1; Revere, 2; Southboro, 1; Wakefield, 1; Watertown, 2; Westfield, 1; Worcester, 2; total, 38.

Anthrax was reported from Woburn, 1.

Dog-bite requiring anti-rabic treatment was reported from Arlington, 1; Boston, 5; Everett, 2; Lowell, 4; Malden, 1; Medford, 6; Salem, 1; total, 20.

Encephalitis lethargica was reported from Boston, 4; Cambridge, 1; Newton, 1; Norwood, 1; Taunton, 1; total, 8.

Epidemic cerebrospinal meningitis was reported from Boston, 3; Easthampton, 1; Fall River, 1; Holyoke, 1; Somerville, 1; Springfield, 1; West Springfield, 1; Worcester, 1; total, 10.

Hookworm was reported from Boston, 2; Cambridge, 1; total, 3.

Malaria was reported from Barnstable, 1; Cambridge, 1; total, 2.

Rabies was reported from Lynn, 1.

Septic sore throat was reported from Boston, 1; Fall River, 1; Haverhill, 1; Medford, 1; total, 4.

Trachoma was reported from Boston, 3; Lowell, 1; Peabody, 1; total, 5.

Trichinosis was reported from Boston, 1.

DISTRIBUTION

ALL COMMUNICABLE DISEASES

	September 1923	September 1922
Total cases (all causes)	3,275	3,491
Case rate per 100,000 population	82.5	88.7

Certain Prevalent Diseases

	September 1923	September 1922
Diphtheria:		
Total cases	612	578
Case rate per 100,000 population	15.4	14.7

Cities and towns noticeably exceeding their median endemic indexes.*

Fall River	(14)	19
New Bedford	(4)	10
Boston	(123)	208
Quincy	(6)	14

Amesbury	(1)	7
Gloucester	(0)	7
Salem	(6)	14
Saugus	(1)	6
Somerville	(7)	16
Worcester	(21)	54
Holyoke	(5)	20
Ware	(0)	15
Pittsfield	(2)	12

	September 1923	September 1922
Measles:		
Total cases	161	268
Case rate per 100,000 population	4.1	6.8

Cities and towns noticeably exceeding their median endemic indexes.*

Barnstable	(0)	10
Fitchburg	(1)	9

	September 1923	September 1922
Scarlet fever:		
Total cases	312	281
Case rate per 100,000 population	7.9	7.1

Cities and towns noticeably exceeding their median endemic indexes.*

Natick	(0)	5
Weymouth	(0)	7
Hamilton	(0)	4
Haverhill	(2)	9
Salem	(3)	7
Clinton	(0)	6
Fitchburg	(0)	9
Webster	(0)	8
Worcester	(11)	28
Pittsfield	(3)	10

	September 1923	September 1922
Typhoid fever:		
Total cases	98	130
Case rate per 100,000 population	2.5	3.3

Cities and towns noticeably exceeding their median endemic indexes.*

Beverly	(0)	5
Newburyport	(1)	9

	September 1923	September 1922
Whooping cough:		
Total cases	341	637
Case rate per 100,000 population	8.6	16.2

Cities and towns noticeably exceeding their median endemic indexes.*

Barnstable	(0)	28
Fall River	(13)	16
New Bedford	(3)	25
Brockton	(7)	19
Newton	(11)	17
Andover	(0)	4
Lowell	(3)	9
Medford	(0)	4
Somerville	(2)	8
Clinton	(0)	8
Douglas	(0)	17
W. Boylston	(0)	6

	September 1923	September 1922
Tuberculosis, pulmonary:		
Total cases	494	402
Case rate per 100,000 population	12.4	10.2
Tuberculosis, other forms:		
Total cases	61	63
Case rate per 100,000 population	1.5	1.6

*The Median Endemic Index is obtained by arranging in arithmetical sequence the monthly totals of reported cases for the past five years and selecting the middle figure. The numbers in parentheses after the name of each city and town indicate the median endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

COURSE OF HEALTH LECTURES FOR THE CITY FEDERATION OF WOMEN'S CLUBS

TENTATIVE PROGRAM

First Day—October 31, 1923. City Hall

10 A.M.

1. Welcoming Address. The Honorable James A. Curley, Mayor.
2. Short Address. Dr. Francis X. Mahoney, Health Commissioner, Boston Health Department.
3. Symposium of the Activities of the City Department of Health. This will include its budget, its divisions and responsibilities. Mr. Stephen Maloney, Executive Secretary, Boston Health Department.

Afternoon Session. Bussey Institute, Arnold Arboretum

2 P.M.

1. Symposium of the Activities of the State Board of Health. Dr. Eugene R. Kelley, Health Commissioner, State Board of Health.
2. Visit to State Laboratories, with explanation of work. Dr. Benjamin White.

Second Day—November 7, 1923, City Hospital

10 A.M.

1. Address. Dr. John Dowling, Superintendent, City Hospital.
2. Communicable Diseases, Their Reporting and Control from the point of view of the City Health Department. Dr. Victor Safford, Deputy Health Commissioner, City Department of Health.
3. Communicable Diseases, Their Care from the Medical Point of View. Dr. Edwin Place, Director, South Department, City Hospital.
4. Prevention of Non-Communicable Diseases. This would be a general discussion of what has been done in the way of preventing such diseases as cancer, heart disease, diabetes, etc. Dr. William H. Robey.

Afternoon Session

2 P.M.

1. Social Welfare in Relation to Health. This will be a talk stressing the necessity of good social conditions in their relation to health and the work of social welfare agencies, outpatient departments, etc. Miss Gertrude Farmer, Director, Department of Social Welfare, City Hospital.

Following this a visit will be made to the various departments of the City Hospital.

Third Day—November 14, 1923, Boston Lying-In Hospital

10 A.M.

1. Welcoming Address. Colonel William D. Sohier, Secretary of the Board of Trustees, Boston Lying-In Hospital.
2. Pre-natal Care of Patients, including importance of early medical supervision and giving the ways this might be obtained, such as

private physicians, out-patient clinics, etc., and also including nurses' supervision and instructions through services that are available. Miss Helen Fowler, R.N.

Afternoon Session—Children's Hospital

1. Infant Care. Outlining the problem of infant mortality and morbidity and the care available for children. Dr. Lewis Webb Hill.
2. Educational Work, giving an outline of the work being done through the various organizations in the City of Boston. Miss Winifred Rand, Director of Child Hygiene, Community Health Association.

Time will be given for visits in the wards of both of these hospitals.

Fourth Day—November 21, 1923, State House

10 A.M.

1. Pre-school Child. A talk on the necessity of physical examinations at this age period, nutrition, posture, and the defects most prevalent, also a short discussion on the agencies dealing with this age group. Dr. Merrill E. Champion, Director, Division of Hygiene, Massachusetts Department of Public Health.
2. Mental Hygiene. A talk on the mental development of children at this age period and the training necessary. Habit Clinics.

Afternoon Session—Health Unit, 17 Blossom Street

1. Short Talk on the Work of Health Units in General. Dr. Charles Wilinsky, Director of the Health Unit.
2. Prevention of Communicable Diseases, Especially Diphtheria. Stressing the Schick Test and the Toxin-Antitoxin Treatment. Perhaps a group of children could be gathered for demonstration. Dr. John A. Ceconi, Director of the Bureau of Communicable Diseases, City Department of Health.
3. Dental Hygiene. Dr. Harold DeWitt Cross.

Obituary

HENRY JABEZ BARNES, M.D.

Dr. Henry J. Barnes, hygienist, died at his summer home at Northborough, Mass., October 20, 1923, at the age of seventy-five.

He was born in the town in which he died, February 16, 1848, the son of Dr. Henry and Elizabeth Ball Barnes. After graduating from Harvard Medical School in 1872 he served as house officer at Boston City Hospital, and settled in practice in Boston, giving special attention to hygiene and soon becoming a member of the American Public Health Association. He served as professor of hygiene in Tufts College Medical School from 1899 to 1912. The following year his name was placed on the retired list of Fellows of the Massachusetts Medical Society, Dr. Barnes spending more and more of his time in Northborough, although he maintained an office in Boston, and kept up his membership in the American Medical Association.

His first wife was Augustine M. A. LeLievre of France. His second, who survives him, was Caroline L. Brooks of Belmont. One daughter and a sister also survive him.

Among the articles which Dr. Barnes contributed to the columns of the Boston Medical and Surgical Journal may be mentioned: "Excavation of Water Basins Used for Domestic Supply," January 26, 1882; "Sand Filtration of Water," January 9, 1890; "Soil Treatment of Sewage," June 19, 1884, and March 5, 1891. For the American Public Health Association he published in 1893, "Arid Atmosphere in Houses in Winter."

HARRY I. GUILFORD

A Tribute

Few lives spell a greater service to the people of this Commonwealth than that of the late Harry I. Guilford.

Mr. Guilford, for seventeen years a loyal and devoted employee of the State at the Antitoxin and Vaccine Laboratory, performed the actual immunization of horses for the production of antitoxic and other serums.

In his long and valuable service, no difficulties could discourage or thwart him, no vexations could disturb his gentle, peaceable disposition. His whole-hearted devotion to his work never revealed any thought of self. He gave to the State long hours of work, and he gave them with a happy willingness that was inspiriting to those about him. He secretly cherished the feeling that his labor was contributing to the prevention of disease and to the alleviation of human suffering. His contribution was in reality a very great one in ways that he was too modest to realize.

The constant flow of antitoxin that has gone to protect or to save countless children from diphtheria was only one of the results of the work of his hands. His love for his duties, his unstinted gift of time and strength, his tolerance for the failings of others, his unvarying gentle humor, and his unswerving honesty influenced all who knew him.

Death came to him suddenly in the prime of life, engaged in his usual duties and surrounded by his colleagues, who held him in high regard and deep affection.

By his death Massachusetts loses a noble citizen; and its people, a rare public servant.

Eugene R. Kelley, M.D.,
Commissioner of Health.

News Items

Massachusetts Medical Society. — 1911-1923—Hagerty, Harry John. Worcester, 17 Elsman Street. Restored by Council October 3, 1923.

HARVARD MEDICAL SCHOOL APPOINTMENT.—Dr. William Lloyd Aycock of the Research Department of the Vermont State Board of Health has been appointed associate professor of preventive medicine and hygiene in the Harvard Medical School.

MRS. WALTER B. CANNON of Cambridge spoke before the Lexington Home and School Association October 25 on the subject: "The Mother, the Teacher, the Church, and the Child." The Association has prepared a series of recommendations covering the importance of regular habits of sleep and recreation for children. The members of the Association are planning for frequent visits to the schools in order to coöperate with the teachers in developing the child's health and mental training.

DR. ISAAC D. RAWLINGS, State Commissioner of Health of Illinois, declares that pure, unadulterated ignorance coupled with inexcusable carelessness is the most supreme curse that ever blighted the health and life of human beings anywhere. His statement was called forth by the fact that there were 423 cases of infectious sore eyes in the newborn of Illinois during the year ending June 30, 1923. He goes on to say that ophthalmia neonatorum, smallpox, typhoid fever, and diphtheria have remained to plague the twentieth century simply because the public and individuals have thus far failed to apply intelligently the scientific means of prevention which are available for the asking.

WEEK'S DEATH RATE IN BOSTON.—During the week ending October 20, 1923, the number of deaths reported was 213, against 204 last year, with a rate of 14.42. There were 26 deaths under one year of age, against 36 last year.

The number of cases of principal reportable diseases were: Diphtheria, 86; scarlet fever, 41; measles, 25; whooping cough, 24; typhoid fever, 4; tuberculosis, 49.

Included in the above were the following cases of non-residents: Diphtheria, 16; scarlet fever, 7; typhoid fever, 1; tuberculosis, 4.

Total deaths from these diseases were: Diphtheria, 4; scarlet fever, 1; tuberculosis, 15.

Included in the above was the following case of a non-resident: Diphtheria, 1.

DEATH NOTICE

DR. FRANK SIMPSON SMITH died suddenly at his home at Pittsburgh, Pa., September 6, 1923, at the age of fifty-four. The cause of death was angina pectoris. Graduating from Harvard College in 1894, he was active in the practice of medicine until 1909. From 1909 until 1914 he was actively engaged in the tuberculosis campaign in California and Colorado. He has not been practicing medicine for the past ten years, but was intensely interested in and closely in touch with everything in the profession. He is survived by his widow.

NOTICES

BUREAU OF COMMUNICABLE DISEASES OF THE BOSTON HEALTH DEPARTMENT

The Bureau of Communicable Diseases of the Boston Health Department announces its partial 1923-24 program of speakers and the titles of their papers. The conferences will be held in the Bureau of Communicable Diseases, Boston Health Department, 1111 City Hall Annex, at 4 p.m. The Health Commissioner cordially invites all those interested.

November 5.—Importance of Blood Cultures in Acute Infectious Diseases. Harry Goldman, M.D., Medical Inspector, Boston Health Department.

November 13.—Pellagra. George C. Shattuck, M.D., Assistant Professor, Tropical Diseases, Harvard Medical School.

November 20.—Smallpox. John S. Brownrigg, M.D., Chief Medical Inspector, Boston Health Department.

November 27.—Differential Diagnosis of Obstructions of Upper Respiratory Tract. Martin English, M.D., Chief of Pediatric Service, Boston City Hospital.

December 4.—Cutaneous Manifestations of Syphilis. John G. Downing, M.D., Medical Inspector, Boston Health Department.

December 11.—Functions of a Municipal Health Department Laboratory. Philip Castleman, M.D., Deputy Commissioner, Laboratory Division, Boston Health Department.

December 18.—Encephalitis Lethargica. Dr. Gaetano Praino, Medical Inspector, Boston Health Department.

December 26.—The Degenerative Diseases of Middle Life (a public health problem). Dr. Harry Linenthal, Physician, Massachusetts General Hospital, Out-Patient Department.

January 2.—Pneumonia, Its Curative and Preventive Treatment. Dr. James Keenan, Medical Inspector, Boston Health Department.

January 8.—Differential Diagnosis of Acute Communicable Diseases. Dr. Edwin Place, Physician-in-Chief, Contagious Department, Boston City Hosptal.

January 15.—The Spinal Fluid as a Diagnostic Aid. Dr. James Siragusa, Medical Inspector, Boston Health Department.

January 22.—Public Health Administration. Mr. S. L. Maloney, Secretary, Boston Health Department.

January 29.—The Coöperative Functions of Private Physicians and Health Departments. Dr. H. M. Pollock, Superintendent, Massachusetts Homeopathic Hospital.

February 5.—Health Centers and What They Are. Dr. Charles F. Wilinsky, Director, Health Unit, Boston Health Department.

February 12.—Relation of Medical Examiner to Health Department. William H. Watters, Medical Examiner.

February 19.—Bubonic Plague. Dr. L. P. Verde, Medical Inspector, Boston Health Department.

February 26.—Trachoma. Dr. M. V. Safford, Deputy Commissioner, Boston Health Department.

March 4.—Tuberculosis. Dr. Harry Watts, Medical Inspector, Boston Health Department.

March 11.—Chronic Arthritis. Dr. Robert Osgood, Professor, Orthopedic Surgery, Harvard Medical School.

March 18.—Measles, with Special Reference to Convalescent Serum Therapy. Dr. William B. Keeler, Medical Inspector, Boston Health Department.

March 25.—Methods of Educating the Public in Matters of Health. Dr. F. P. Denny, Health Officer, Brookline Health Department.

April 1.—Acute Anterior Poliomyelitis. Dr. H. Emmons, Medical Inspector, Boston Health Department.

April 8.—Typhoid Fever. Dr. C. Moran, Medical Inspector. Boston Health Department.

April 15.—Vaccine Therapy of Pertussis (Curative and Prophylactic). Dr. A. J. Collins.

April 22.—Botulism. Dr. Walter T. Fuller, Medical Inspector, Boston Health Department.

A general and informal discussion will follow the reading of each paper.

JOHN A. CECONI, M.D.,
Director, Bureau of Communicable Diseases.

ANNUAL MEETING OF THE NATIONAL COMMITTEE FOR THE PREVENTION OF BLINDNESS

The annual meeting of the National Committee for the Prevention of Blindness will be held in the Russell Sage Foundation Building, 130 East 22d Street, New York, Thursday, November 15, at 4.30 o'clock. Dr. John H. Finley, former Commissioner of Education of the State of New York, now on the editorial staff of the *New York Times*, will give the principal address. Dr. Finley has recently returned from the Near East and will tell of conditions there.

Mr. Edward M. Van Cleeve will speak of the work of the Committee under his directorship.

BRISTOL SOUTH DISTRICT MEDICAL SOCIETY

The semi-annual meeting will be held in the Public Library, New Bedford, on Thursday, November 1, at 5 p.m.

Speaker, Chester M. Jones, M.D., of Boston.

Subject, "Medical Drainage of the Gall-Bladder in Diagnosis and Treatment."

The censors will be at the same place at 4 p.m. to meet the applicants for membership: Joseph P. Ponte, Jr., Salmon P. Wilde, and Louis M. Cohen.

A. J. ABBE, *Secretary.*

BOSTON CITY HOSPITAL

A staff clinical meeting of the Boston City Hospital will be held in the Cheever Surgical Amphitheatre on Friday, November 2, 1923, at 8.15-9.45 p.m. "Rheumatic Fever, Medical and Surgical Point of View." Speakers, Wm. H. Robey and Ed. H. Bradford. Open discussion. Physicians and medical students invited.

JOHN J. DOWLING, *Superintendent.*

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces open competitive examinations for the positions of Inspector and Agent, Antinarcotic Act. The entrance salaries for both agents and inspectors will range from $1800 to $2250 a year plus bonus, subsistence allowance and necessary travelling expenses.

Applications must be filed with the Civil Service Commission, Washington, D. C., by November 6, 1923.

Physicians and pharmacists may be selected as inspectors.

A COURSE OF FIFTEEN LECTURES ON THE MENTAL HEALTH OF CHILDREN

is being given in Boston University School of Education by eminent experts on child health under the direction of J. Mace Andress, Ph.D., Head of the Department of Psychology and Child Study, Boston Normal School, and with the coöperation and endorsement of the Massachusetts Society for Mental Hygiene.

The remaining lectures will be given on successive Monday evenings, at 8 o'clock, in Jacob Sleeper Hall, Boston University, 688 Boylston Street, Boston.

The course will be of practical value for teachers, mothers, ministers, social workers, and for all who are responsible for the training of children.

The subjects and speakers are as follows:

November 5. "The Contribution of Mental Hygiene to School Instruction." William H. Burnham, Ph.D., Professor of Education and School Hygiene, Clark University; formerly President, Massachusetts Society for Mental Hygiene.

November 12. "Common Sense in Intelligence Testing." Arthur W. Kallom, A.M., Assistant Director, Department of Investigation and Measurement, Boston Public Schools.

November 19. "Salvaging the Feeble-Minded Child." Walter E. Fernald, M.D., Superintendent, Massachusetts School for the Feeble-Minded, Waverley.

November 26. "Vocational Guidance and Mental Health." George K. Pratt, M.D., Medical Director, Massachusetts Society for Mental Hygiene, Boston.

December 3. "School Entrance and the Pre-School Age." Arnold Gesell, Ph.D., M.D., Professor of Child Hygiene, Yale University, and Director Yale University Psycho-Clinic.

December 10. "High School—The Breaking Point." Frankwood E. Williams, M.D., Medical Director, National Committee for Mental Hygiene, New York City.

December 17. "Understanding the Wayward Child." Augusta F. Bronner, Ph.D., Director, Judge Baker Foundation, Boston.

January 7. "The Wayward Child in Court." Herbert C. Parsons, Massachusetts State Commissioner of Probation.

January 14. "Nervousness in the Light of Modern Psychology." Martin W. Peck, M.D., Chief, Out-Patient Department, Boston Psychopathic Hospital.

January 21. "The Mental Health of Normal Children." J. Mace Andress, Ph.D., Head of Department of Psychology, Boston Normal School.

For particulars relating to fees for the course or single lectures, apply to the Massachusetts Society for Mental Hygiene.

PUBLIC HEALTH LECTURERS FOR THE YEAR 1923.

The Committee on Public Health of the Massachusetts Medical Society has been able during the past few years to arrange with well known specialists in various medical fields to give talks at meetings of the District Medical Societies on subjects of interest and importance to all practitioners. It is a pleasure to announce that a similar arrangement has been made this year and that the gentlemen named below are willing, without expense to the District Society, to give occasional talks of thirty to forty minutes on subjects relating to the promotion of public health, extending opportunity for questions and discussion. It is suggested that medical societies consider meeting at neighboring public institutions, since such meetings have been most successful in the past, particularly at the tuberculosis sanatoria and state hospitals for the insane.

José Penteado Bill, M.D., Doctor of Public Health. Specialty: Preventive Medicine.

Frank C. Dunbar, M.D., Bacteriologist, Instructor in Bacteriology and Pathology, Tufts College Medical School. "Methods of Technique in Collecting Specimens."

Walter E. Fernald, M.D., Superintendent, Massachusetts School for the Feeble-minded.

Timothy Leary, M.D., Professor of Pathology, Tufts College Medical School; Medical Examiner, Suffolk County.

Herman A. Osgood, M.D., X-Ray Department of the Boston City Hospital; "Focal Infection."

Edwin H. Place, M.D., Physician-in-Chief, South Department, Boston City Hospital. Specialty: Contagious Diseases.

C. Morton Smith, M.D., Chief of Department of Syphilis, Massachusetts General Hospital.

George Gilbert Smith, M.D., Assistant in Department of Genito-Urinary Diseases, Massachusetts General Hospital. Specialty: Genito-Urinary Diseases.

Lesley H. Spooner, M.D., on Staff of Out-Patient Department, Massachusetts General Hospital. Specialty: Specific Diagnosis and Treatment of Pneumonia.

George H. Wright, D.M.D., Lecturer on Dental Hygiene, Harvard Dental School. Specialty: Dental Surgery.

Thomas F. Kenney, M.D., Director of School Hygiene, City of Worcester. Specialty: Full-Time School Health Officer.

Paul Dudley White, M.D., Chief of Medical Out-Patient Department and of the Cardiac Clinics, Massachusetts General Hospital. Specialty: Cardiovascular Diseases.

Gilman Osgood, M.D.: "A General Practitioner's Observations on the Relation of Oral Infection to Disease."

Francis H. McCrudden, M.D., Professor of Applied Therapeutics, Tufts Medical School: Health Examinations.

DISEASES REPORTED TO MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

Week Ending October 13, 1923

Disease	*No. of Cases*	*Disease*	*No. of Cases*
Anterior poliomyelitis	9	Ophthalmia neonatorum	15
Anthrax	1	Pneumonia, lobar	30
Chicken-pox	51	Scarlet fever	119
Diphtheria	162	Septic sore throat	1
Dog-bite requiring antirabic treatment	7	Suppurative conjunctivitis	6
Encephalitis lethargica	1	Syphilis	31
Epidemic cerebro-spinal meningitis	1	Trachoma	3
German measles	4	Tuberculosis, pulmonary	98
Gonorrhea	93	Tuberculosis, other forms	19
Influenza	1	Typhoid fever	16
Measles	116	Whooping cough	59
Mumps	33		

Week Ending October 20, 1923

Disease	*No. of Cases*	*Disease*	*No. of Cases*
Anterior poliomyelitis	13	Ophthalmia neonatorum	22
Anthrax	1	Pneumonia, lobar	56
Chicken-pox	96	Scarlet fever	156
Diphtheria	257	Septic sore throat	8
Dog-bite requiring anti-rabic treatment	5	Suppurative conjunctivitis	15
Encephalitis lethargica	4	Syphilis	21
Epidemic cerebro-spinal meningitis	4	Trachoma	2
German measles	3	Tuberculosis, pulmonary	152
Gonorrhea	86	Tuberculosis, other forms	18
Influenza	4	Typhoid	20
Malaria	1	Whooping-cough	73
Measles	140		
Mumps	59		

SOCIETY MEETINGS

DISTRICT SOCIETIES

Suffolk District Medical Society:

November 14, 1923:—Meeting of Surgical Section in association with the Middlesex South District Medical Society at the Boston Medical Library at 8.15 p. m.

December 19, 1923:—Meeting of Medical Section at the Boston Medical Library at 8.15 p. m.

January 30, 1924:—In association with the Boston Medical Library and the Middlesex South District Medical Society at the Boston Medical Library at 8.15 p. m.

February 27, 1924:—Meeting of Surgical Section, in association with the Middlesex South District at the Boston Medical Library at 8.15 p. m.

March 26, 1924:—Meeting of the Medical Section, in association with the Boston Association for the Prevention and Relief of Heart Disease, at the Boston Medical Library at 8.15 p. m.

April 30, 1924:—Annual Meeting, to be held at the Boston Medical Library at 8.15 p. m.

Worcester District:—The meetings for the year are as follows:
November 14 in Whitinsville. Paper by Dr. Channing Frothingham of Boston.
December 12 in Worcester. Papers by Dr. Fred B. Lund of Boston and Dr. Michael F. Fallon and Dr. Walter Seelye of Worcester.
January 9 at St. Vincent Hospital, Worcester.
February 13 at Memorial Hospital, Worcester.
March 13 at City Hospital, Worcester.
April 10—A public meeting.
May 8—Annual Meeting.

Franklin District:—Society meets at Greenfield the second Tuesday of November, January, March, May, July, September. Annual Meeting in May.

Norfolk South District:—Meetings first Thursday of each month at 11.30 a. m., at Norfolk County Hospital, Braintree.

Middlesex South District Medical Society:

November 14, 1923:—Combined meeting with the Surgical Section of the Suffolk District Medical Society at the Boston Medical Library.

December, 1923:—Hospital Day, probably at the Cambridge Hospital.

January 30, 1924:—Combined meeting with Suffolk District at the Boston Medical Library.

February 27, 1924:—Combined meeting with the Surgical Section of Suffolk District at the Boston Medical Library.

March, 1924:—Hospital meeting; place not yet determined.

April, 1924:—Annual meeting.

Hampden District:—The meetings for the year are as follows:
January, 1924, at Springfield. April, 1924, at Springfield. Annual Meeting.

Bristol South—Semi-annual meeting will be held in New Bedford, November 1, 1923. The Annual Meeting will be held in New Bedford, May 1, 1924.

Hampshire District Medical Society:

November 14, 1923:—Meeting at Northampton at 4.30 p. m. Paper by Dr. Howard F. Root of Boston.
Meetings held bi-monthly, the second Wednesday in the month, at Boyden's Restaurant, Northampton.

STATE, INTERSTATE AND NATIONAL SOCIETIES

Schedule of meetings of the New England Dermatological Society:

Monday, November 5, 1923, at 2 p. m., in the Skin Out-Patient Department, Massachusetts General Hospital.
Wednesday, December 12, 1923, at 3 p. m., in the Surgical Amphitheatre, Boston City Hospital.
Wednesday, February 13, 1924, at 3 p. m., in the Skin Out-Patient Department, Massachusetts General Hospital.
Wednesday, April 9, 1924, at 3 p. m., in the Surgical Amphitheatre, Boston City Hospital.

Eastern Dermatological Societies:—The second annual joint meeting of these societies will be held at the Massachusetts General Hospital, in the Skin Out-Patient Department, on November 5, 1923, at 2 o'clock.